REFRIGERATION MOST ACTIVE DIVISION OF ELECTRIC INDUSTRY

NEW YORK CITY—That the electric refrigeration industry is the only division of the electrical supply trade which is at present showing any increase in production and sales is the assertion made by Dun & Bradstreet, Inc. in a report issued by that organization on April 24 concerning the current situation in the electrical supply field.

The report states that sales by many manufacturers are running from 100 to 200 per cent ahead of those for the same period last year, and mentions the fact that some factories are working on 24-hr. schedules.

Cash Sales Increase

"Shipments, at many plants, are being made at the rate of 30 carloads a day, and total sales for April are expected to run in excess of the March figures, which were the highest in the last five years for some leading manufacturers," the statement says.

In Baltimore, the number of cash sales jumped during March, while volume of store trade showed an unusual increase in Buffalo, Newark, St. Louis, Philadelphia, Cleveland, Chicago, and Washington distributorships.

During the 30 days previous to issuance of the Dun & Bradstreet report, sales of industrial machinery showed a gain, but the bulk of distribution was centered in washers, vacuum cleaners, clocks, irons, and table appliances.

Department Store Report

"Some of the leading department stores now report that electrical appliances constitute fully 20 per cent of their home furnishings sales, with the heaviest turnover recorded in washing machines, ironers, refrigerators, vacuum cleaners, clocks, toasters, and percolators," the report continues.

"Public utility companies, the automotive industry, and the railroads are not buying extensively, as yet, although more numerous inquiries are being received from these sources. The movement of electrical wiring and fixtures continues curtailed."

Wholesalers are operating conservatively, says the statement. They are buying supplies for immediate requirements only, and are carrying inventories considerably lighter than in previous years.

Operate at 70% of Capacity

The report states that most manufacturers are running at about 70 per cent capacity, and that deliveries are fairly prompt.

Citing the drop of approximately 20 per cent in electrical goods prices last year, the report remarks that while copper prices have stiffened this year, the slowness of other raw materials in reaching higher levels has "affected adversely" quotations on electrical goods.

Estimating that annual consumption of electricity in the average home is only eight per cent of what it would be if the home were completely electrified, Dun & Bradstreet states that purchase of $5,000,000,000 worth of appliances would be required to triple the average consumption of all wired homes in the United States.

Cultivate Existing Market

It is pointed out that the chief problem of the electrical industry is now to cultivate the existing market, as practically 70 per cent of all homes are now wired and most industries are now users of electric current to some extent.

"Nearly every community of 1,000 population or more in this country now has electric service, as well as 50 per cent of all communities between 250 and 1,000, and more than 25 per cent of all hamlets of less than 250 population," is the report's assertion.

In regard to the status of collections in the trade, the report says: "While the collection ratio to outstandings on recent sales is satisfactory, the collection of old indebtedness is a slow and laborious process. Since the early part of April, instalment accounts have been paid a little more promptly, and many overdue payments have been cleaned up."

Number of failures among electrical goods wholesalers and retailers increased in 1932, but the drop in failures of manufacturing concerns during that year made the year's total number of insolvencies for the entire industry only 209, as compared with 217 in 1931.

The trade's defaulted indebtedness decreased in 1932, says the report. In that year it was $4,589,173, as compared with $4,822,234 in 1931. "The largest decrease in the involved liabilities appeared in the manufacturing division."

In 1932, 40 manufacturers and 169 wholesalers and retailers failed. In 1931, 57 manufacturers and 169 wholesalers and retailers became insolvent. During the first quarter of 1933, seven manufacturers and 33 wholesalers and retailers failed, Dun & Bradstreet's figures show.

Advertising Tower

Grunow electric refrigerators are being advertised in Flint, Mich., in this tower which fronts on Main St.

ECONOMIC CHANGES WILL BE DISCUSSED BY N.E.M.A.

(*Concluded from Page 1, Column 5*)

lems of modern industry brought out by the two Monday meetings, and will evolve for presentation at the Tuesday evening meeting a program of activities to be undertaken including recommendations as to changes in the association's work and organization which seem advisable.

Gerard Swope, president of General Electric Co., will give the initial address at the Monday morning session. His subject is to be: "The Present Economic Changes and Their Effect on Industry."

He will be followed by J. S. Tritle, vice president, Westinghouse Electric & Mfg. Co., who is expected to discuss: "Problems Forced on the Electrical Industry by Inflation, Sales Taxes, Thirty-Hour Week, Minimum Wage Legislation, and other Influences."

General discussion will conclude the morning meeting.

Opening the session Monday evening, Francis E. Neagle. counsel for the National Electrical Manufacturers Association, will speak on "The Practical Possibilities for United Industry Action, and the Legal Aspects thereof, in the Rapidly Changing Economic Situation."

A three-fold discussion of the subject, "The Commercial Problems with Which the Industry is Faced Including Specific Suggestions for Meeting Them," will be handled by Clarence L. Collens, president, Reliance Electric & Engineering Co., from the standpoint of the engineering application division; by C. E. Wilson, vice president of General Electric Co., for the supplies division; and by A. G. Kimball, president of Landers, Frary & Clark, for the appliance division.

Meeting times of committees and sections are given below:

Sunday, May 21: Codes and Standards Committee, 10:00 a. m.; Law Committee, 8:00 p. m.; Advisory Committee, Motor and Generator Section, 8:00 p. m.

Monday, May 22: Laminated Phenolic Products Section, 2:30 p. m.; Policy Committee of the Electric Range Section, 2:30 p. m.

Tuesday, May 23: Executive Committee, 10:00 a. m.; Electric Range Section, 10:00 a. m.; Industrial Control Section, 10:00 a. m.; Refrigeration Division, 10:00 a. m.; Vulcanized Fibre Section, 10:00 a. m.

Wednesday, May 24: Board of Governors, 10:00 a. m.; Heating Appliance Section, 10:00 a. m.; Laboratories Committee, 8:00 p. m.

Special entertainment will be provided for ladies attending the convention.

Model Electrical Home Built in New Orleans

NEW ORLEANS—Model electrical home, feature of the spring campaign of the Electrical League of New Orleans and the New Orleans Electric Refrigeration Bureau, is attracting many visitors every week, and on Sunday, April 17, the recorded attendance was just under 3,000.

In the basement of the new house, which is located on one of the city's most prominent residential streets, is an exhibit of 12 makes of electric refrigerators, every one of the local distributors being represented, each with two or more models displayed.

'MAN HUNT' CONTEST BOOSTS G. E. SALES

CLEVELAND, May 9 (Special Wire to ELECTRIC REFRIGERATION NEWS)—The national sales curve on the General Electric refrigerator, range, and dishwasher chart continued its upward climb last week as commissioners and deputy commissioners engaged in the "Man Hunt" contest reported increased sales on all sides.

Since General Electric's reduction of prices for May and June on models S-44 and S-67 of the standard line, sales of these units are being made in some parts of the country faster than stock can be supplied, distributors report.

Commissioner Edmundson continues as national leader, and is followed closely by C. L. McCrea, Dan Willis, and H. A. Pendergraph.

District leaders are unchanged from last week. Mr. McCrea leads in the Atlantic district; Mr. Thompson has .5 per cent lead in the metropolitan area; Willis, far over quota, heads the central district; and Distributor Glueck is commissioner of the midwestern section.

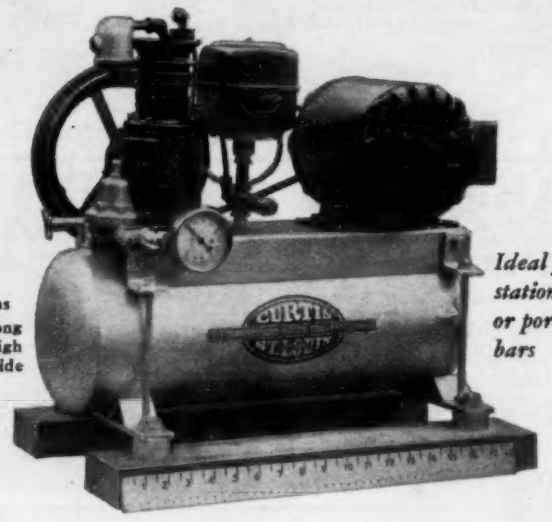
Mr. Pendergraph has narrowed the gap between himself and Commissioner Edmundson in the Southwest; and B. K. Sweeney and L. H. Bennett continue as leaders in the Rocky Mountain and Pacific coast districts, respectively.

GEORGIA POWER STARTS SPRING CAMPAIGN

ATLANTA—Salesmen in every division of the Georgia Power Co. here launched that company's spring electric refrigeration sales campaign on May 4, with a quota of $250,000 for the nine weeks until the drive's close on July 1. Divisional meetings were held last week to complete plans for the campaign.

Beer Pumps

(*Completely Automatic*)



Overall Dimensions
19 3/4" long
18 1/4" high
12 1/4" wide

Ideal for stationary or portable bars

Attractively Priced—
Prompt Delivery

Also Curtis Commercial Refrigeration for all types of dispensing equipment

TELEGRAPH OR WRITE

CURTIS PNEUMATIC MACHINERY CO.
1912 Kienlen Ave. St. Louis, U.S.A. New York Office—518 H. Hudson Terminal Bldg
79th Year

THE MOST *Beautiful* REFRIGERATOR IN THE WORLD

GIBSON

Model H-98 Specifications

Overall Dimensions:
Width .....39⅝"
Depth .....30⅝"
Height .....60⅝"

Capacity: Gross, 9.88 Cu. Ft.; Net, 9.10 Cu. Ft.; Shelf and Floor Area, 15.16 Sq. Ft.; Ice Cubes, 126; Legs, 13"; Trays: Four single and one double depth; Exterior Finish, Lacquer or Porcelain.

Your Opportunity for "DOUBLE-BARRELED" PROFIT

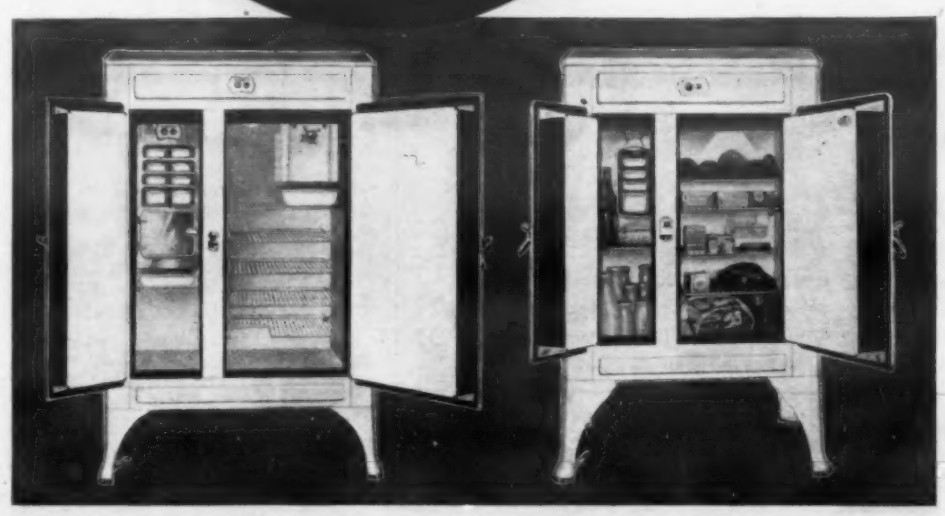
There is a Gibson model for every size family and every size income. Nine beautiful models, two distinct cabinet styles. Gibson Series L is the outstanding value in low cost refrigeration and the moderately priced Series H is the finest line of refrigerators ever built.

Every model powered by the Gibson MonoUnit. Twin cylinders, hermetically sealed.

Whatever prospective owners desire in refrigeration, Gibson has it! Take advantage of this opportunity at once. Write for details.

GIBSON ELECTRIC REFRIGERATOR CORP.
Greenville - Michigan

TUDOR MODELS
SERIES H



STANDARD EQUIPMENT

DOOR LOCK and KEYS
ADJUSTABLE SHELF (Pat. Pending)
REMOVABLE SHELF SECTION
BUTTER and EGG TRAY
RUBBER FOOT PADS
13 INCH LEGS
LIFE-TIME RECIPE FILE
SLIDING SHELVES
INTERIOR LIGHT
12-POINT TEMPERATURE CONTROL
REFRIGERATES WHILE DEFROSTING

IT'S SO EASY TO OWN A GIBSON

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

VOL. 9, NO. 3, SERIAL NO. 217
ISSUED EVERY WEEK

Copyright, 1933, by Business News Pub. Co.

DETROIT, MICHIGAN, MAY 17, 1933

Entered as second-class matter Aug. 1, 1927

THREE DOLLARS PER YEAR
TEN CENTS PER COPY

SERVEL STYLES HERMETIC LINE; LOWERS PRICES

Crusader Leader Sells For $99.50, F.O.B.; Hermetic, $129.50

EVANSVILLE, Ind.—A new line of Servel hermetic household models and new low prices on both the hermetic and Crusader lines were recently announced to Servel distributors and dealers by C. A. Miller, sales manager of Servel Sales, Inc.

Shipment of the new models began last week and will be stepped up as rapidly as production gets fully underway, Mr. Miller states.

The new hermetic line carries a one-year guarantee. The cabinet design is described as semi-modernistic and has a double-bevel top, in contrast to the absolutely flat top which characterized the former Servel hermetic line. Exterior overall dimensions have been reduced, but the shelf area has been increased.

The price schedule on the new hermetic line represents a drastic reduction from the retail prices of the former line, the difference being as much as $100 and more for three of the models.

F.O.B. prices for the new line, tax

(*Concluded on Page 4, Column 4*)

FRIGIDAIRE DESIGNS DIAMOND-FIN COILS

DAYTON—Development of a new type commercial refrigeration coil that offers from 50 to 80 per cent more refrigeration capacity than comparable sizes of former Frigidaire direct-expansion types was announced May 11 by Frigidaire Corp.

The fins of the new coil are die-cut in diamond shape. Fin area is increased so that all of the effective surface area is used for refrigeration, according to the announcement.

Principal improvements claimed for the coil are increased capacity, free air flow, no frost accumulation, better preservation of foods and meats without dehydration, and the fact that compressor operation at higher back pressures is permitted, which in many cases increases the refrigeration capacities of compressors as much as 20 per cent.

"On specific refrigeration installations, smaller coils, fewer coils, or smaller compressors will provide the same amount of refrigeration given by

(*Concluded on Page 4, Column 3*)

POWER TAX SHIFTED FROM CONSUMERS TO UTILITIES

WASHINGTON, D. C.—Transfer of the tax on electricity used for domestic and commercial purposes from the consumer to privately owned utilities, and reduction of the tax from 3 to 2 per cent, were sections of the House bill (H. R. 4040) which passed the Senate in a revised form May 12.

In addition, the bill places a tax of 1 per cent, to be paid by users, on industrial power, which is not now subject to tax. Exemption of municipal electric plants from the tax on domestic and commercial energy is included in the bill.

Two amendments to the measure were approved. One provides that the tax on industrial power shall be paid by any person who manufactures or imports in excess of 500 kwh. of energy per month. It was also agreed to exempt farmers using electrical energy for irrigation, and any charitable or educational institution, from paying the 1 per cent consumers' tax.

PALMER HEADS PERFECTION COOLER DIVISION

MILWAUKEE—J. N. Palmer, formerly connected with Perfection Cooler Co. of Michigan City, Ind., has been made manager of the Perfection Cooler and Dispenser division of Geuder, Paeschke & Frey Co. here, according to Louis Reinhard, company official.

This appointment follows the recent purchase of Perfection Cooler Co. by the Milwaukee concern.

Westerner

Streamlined cabinets mark the new deluxe models of O'Keefe & Merritt, Los Angeles firm.

2 New G.E. Models Have Enclosed Monitor Top

CLEVELAND—A new model, with 4.7-cu. ft. net capacity, has been added to the line of General Electric refrigerators, according to an announcement made last week.

It has also been announced that the G. E. 10-star model is available in the baked glyptal finish, this model listing at $230 f.o.b.

The new model, with porcelain exterior finish (HT-47) lists at $170 f.o.b. factory (tax paid) and in the glyptal finish (HX-47) is listed at $155 f.o.b.

This model has 8.3 sq. ft. of shelf area and has two ice cube trays which will make 40 cubes or 4½ lbs. of ice at one freezing.

It has the enclosed Monitor Top and stainless steel evaporator which characterize the 10-star model. The control is equipped with a semi-automatic defrosting switch which permits defrosting of the evaporator without interruption of the refrigeration process. This model is equipped with a

(*Concluded on Page 21, Column 3*)

STEWART-WARNER NAMES OTIS GENERAL MANAGER

CHICAGO—J. E. Otis, Jr., a director of Stewart-Warner Corp. and general manager of Alemite Corp., has been appointed general manager of Stewart-Warner and all its subsidiaries, according to C. B. Smith, president of the corporation.

Following the resignation May 2 of W. J. Zucker (see May 10 issue of ELECTRIC REFRIGERATION NEWS), Frank A Hiter, sales manager of Alemite Corp., assumed the duties of general sales manager of Stewart-Warner and subsidiaries.

Other important personnel changes are expected to follow with the completion of reorganization plans.

Combining of the Alemite and Stewart-Warner plants is one of the first steps which has been taken to effect economies of production, management, and sales. The amalgamation was made possible because of the additional factory space recently acquired by Stewart-Warner through the purchase of the property of American Bridge Co. on Diversey Blvd.

Stewart-Warner has recently increased its employment figure by 70 per cent, states Mr. Smith.

Gibson 14,000 Orders Behind Schedule

GREENVILLE, Mich.—Over 14,000 unfilled orders have piled up at the Gibson Electric Refrigerator Corp. plant here, in spite of the fact that the factory has been working on a 24-hour basis since February, according to W. R. Marshall, director of advertising and sales promotion.

It has been found necessary to open the Gibson plant at Belding, Mich., which is also running 24 hours a day.

1933 O'KEEFE & MERRITT CABINET IS STREAMLINED

Prices on Eight Models Range from $99 To $295

LOS ANGELES—Eight models, four of which feature streamlined cabinets, comprise the new household electric refrigerator line being introduced by O'Keefe & Merritt Co. here at prices ranging from $99 to $295 (Los Angeles).

A feature of the deluxe models is a small built-in thermometer above the control dial which indicates the refrigerator temperatures.

Net food storage capacities of the eight models range from 4 cu. ft. to 10.20 cu. ft. All models have lacquer exteriors and a two-cylinder methyl chloride compressor of conventional design below the food chamber.

The four deluxe models, whose cabinets have deeply rounded corners at the top and sides and are mounted on broom-high legs, have 3½ in. of Insulite at the sides, top, and bottom. Other four models have 3 in. of the same insulation. All units are equipped for semi-automatic defrosting.

In all but the largest refrigerator, Wagner 1/6-hp. motors are used to drive the compressors. The largest model has a ¼-hp. motor. O'Keefe & Merritt manufactures its own compressors, evaporators, and cabinets, and uses Detroit Lubricator expansion valves and Bush condensers.

Model 40 has a net capacity of 4 cu. ft., and a shelf area of 7 sq. ft. Its two ice trays produce 56 cubes at a freezing. Cabinet of this model is of conventional design. Its price is $99.

Next of the line is No. 50, also of conventional styling. Priced at $129,

(*Concluded on Page 4, Column 4*)

U. S. SUPREME COURT UPHOLDS RATE CUT

WASHINGTON, D. C.—Holding that methods of valuation and computation used by the California Railroad Commission in fixing a value of $65,500,000 on the gas properties of Los Angeles Gas & Electric Corp. were fair, and the resulting rate reduction was not confiscatory, the United States Supreme Court May 8 denied an appeal

(*Concluded on Page 8, Column 1*)

American Radiator Will Use Steam Ejector for Air Conditioning

'Decalorator' Produces Up to 1,000 Tons of Refrigeration, Adapted to Home Cooling

NEW YORK CITY—Introducing a new steam ejector refrigerating system for use in air conditioning of homes, offices, and public buildings, American Radiator and Standard Sanitary Corp. made a unified presentation, at the Waldorf-Astoria hotel here Monday afternoon, of a wide variety of air-conditioning equipment which its subsidiary companies manufacture.

Subsidiaries which have developed air-conditioning systems or accessories include: American Radiator Co. (heating systems, home humidifiers, and Arco air-mixing boxes); Detroit Lubricator Co. (refrigeration and oil burner controls); Campbell Metal Window Corp. (air-conditioning cabinets); Fox Furnace Co. (warm-air furnaces); American Blower Corp. (fans, blowers, and large and small air-conditioning plants); and Ross Heater & Mfg. Co. (newly acquired Buffalo firm which developed the steam ejector).

Complete equipment of this group of companies will be revealed May 27 at the opening of the Century of Progress Exposition, Chicago, where a "Garden of Comfort" is now being erected to demonstrate air conditioning, Rolland J. Hamilton, president of the American Radiator Co., announced.

"A large weather-making plant, partially housed in glass, will transform hot and humid summer air into conditioned mountain-like atmosphere," Mr. Hamilton declared. This installation will be in the air-conditioning building of the garden. New developments in bathroom design and plumbing fixtures will also be shown at the exposition, in a building to be known as the Standard Sanitary structure.

In addition to complete weather-manufacturing systems, the company announced equipment which can be added to existing furnaces and heating plants, so that these old installations can be utilized for summer cooling as well as winter heating, and for circulating air throughout the year.

Another new development is a new hydraulic coupling designed by American Blower engineers to vary the speed of fans on air-conditioning systems which are driven by constant-speed motors.

Speed of the coupling is varied by regulating the amount of oil in it. When full of oil, the driven half of the coupling runs at full motor speed; this can be reduced to 20 per cent of motor speed when all oil is pumped from the coupling into a small cast-

(*Concluded on Page 19, Column 1*)

G. E. DEMONSTRATES REFRIGERATED TRUCK

SCHENECTADY, N. Y.—A new delivery truck equipped with electric refrigeration has been constructed by the transportation department of the General Electric Co., and during May was shown in various cities of New York to dealers interested in the delivery of ice cream, meats, etc.

The body, which contains the machinery, refrigerated compartment, and empty can compartment, is mounted on a 1½-ton chassis having a 157-in. wheelbase. Space is provided

(*Concluded on Page 4, Column 5*)

McElhinny Named Commercial Mgr. Of Frigidaire

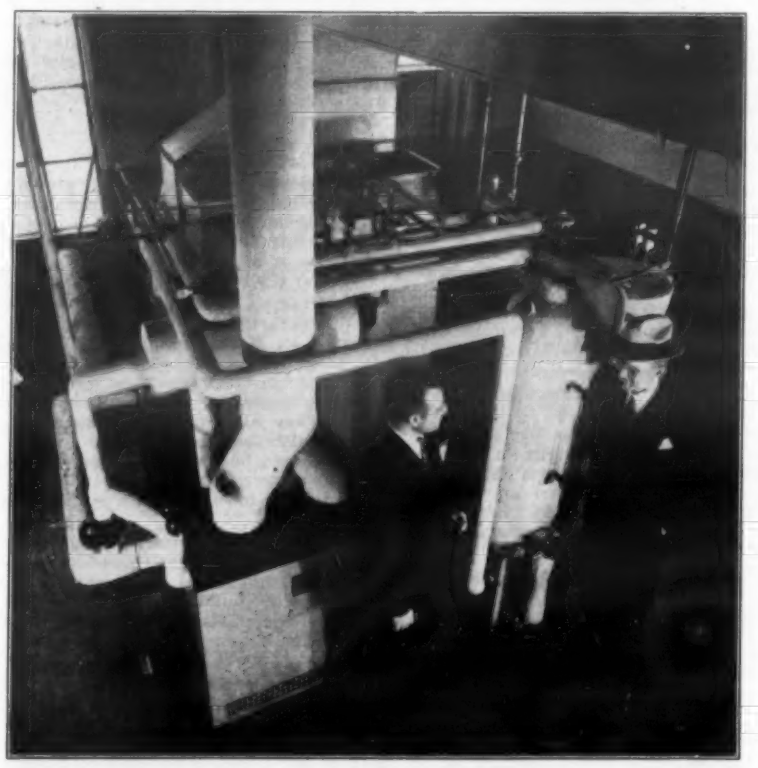
DAYTON—W. D. McElhinny, former vice president in charge of sales for Copeland Products, Inc., has been selected to head the commercial refrigeration division of Frigidaire Corp., according to H. W. Newell, vice president in charge of sales.

After seven years with the Copeland company, Mr. McElhinny returns to the organization which "gave him his start" in the electric refrigeration business.

He was one of the pioneer salesmen of the old Frigidaire Corp., joining the company in 1919. When Frigidaire merged with Delco-Light, he was transferred from his position as regional sales manager, to assistant

(*Concluded on Page 4, Column 2*)

Steam for Summer Cooling



S. E. Barth (left), sales manager, and C. T. Morse, president of American Blower, discuss the Decalorator, announced above. Mr. Morse is leaning against a vertical type Decalorator which cools water for the home air conditioner in the rear. Behind Mr. Barth is an Arco gas boiler which provides steam for the Decalorator.

FORD'S CREDIT COMPANY IS PURCHASED BY C.I.T.

DETROIT—Purchase by Commercial Investment Trust Corp. of the Ford Motor Co.'s interest in the Universal Credit Corp., which has been the finance company for Ford over a period of years, was consummated here Friday. The purchase price was $30,000,000.

The completion of the sale was announced in a joint sta'ement issued by Henry Ford, and Henry Ittleson, president of Commercial Investment Trust Corp., which statement reads as follows:

"Contracts were signed today for the sale by the Ford Motor Co. of its interest in the Universal Credit Corp., to Commercial Investment Trust Corp.

"Universal Credit Corp. has been for a number of years the automobile financing organization of the Ford Motor Co., and the same intimate re-

(*Concluded on Page 4, Column 1*)

BAKER TAKES CHARGE OF EASTERN OFFICE

OMAHA—C. A. Baker, vice president of Baker Ice Machine Co., has assumed personal charge of all Eastern sales activities, with headquarters in New York City. He will work directly with distributors on the Eastern seaboard.

According to company officials, this is the principal move in a program of expansion now under way.

BY GEORGE F. TAUBENECK - - -

Future Houses

This is the second of a short series of articles on new developments in house construction — developments which may open up vast new opportunities to specialty selling organizations.

Another study of this subject is scheduled for the next issue of the News.

Mass Production

How will the house of the future be constructed?

That mass production of sections and units will be a large factor in building future homes seems to be clearly indicated.

Two reasons for mass production are: under the best of conditions it should reduce the cost of building, and secondly, building interests are beginning to realize the advantages factory production can offer.

The high cost of housing today is well known. Irrespective of such coincident expenses as the cost of the lot, the cost of financing, and taxes, the house itself (usually paid for on the instalment plan and by the mortgage system) has come to mean an original outlay which the average citizen considers far beyond the capacity of his pocketbook.

It is estimated that a house should cost not more than twice the yearly income of an individual. A man making $10,000 a year rarely finds it possible to obtain a house costing $20,000 which is adequate to his needs or in keeping with his standard of living.

When one considers the man making $1,400 to $1,500 a year (which is the approximate average income in this country) it will readily be seen that he faces a serious problem should he try to build a house costing $3,000. In spite of the fact that these are depression times, it has been found difficult to build for that amount a house which would satisfy the obviously necessary requirements of safety, permanence, beauty, and efficiency with low maintenance cost.

This conclusion was reached by Hoover's Conference on Home Building and Home Ownership.

"The summary of low-cost housing developments," states the report of the Committee on Low-Cost Housing Projects, "seems to indicate that, although a few projects in low-cost housing are satisfactory, the majority of families receiving below $1,500 annually cannot, at present costs, afford new houses representing acceptable standards, but doubtless will be more satisfactorily housed in used dwellings."

Several factors contribute to the high cost of housing.

Although, says *Fortune*, part of the high cost is due to the owner's custom-built ideas (demanding special dimensions in materials and innumerable gadgets), and to the owner's creditor (demanding permanence far beyond the owner's need to secure the investment), the largest share of the blame must be assumed by the house-manufacturing industry.

The first sin to be laid to its door is waste. Mr. Hoover's Commission on Waste reported in 1923 an estimate that waste in the building industry amounted to 53 per cent—most of which is due to mismanagement and lack of organization.

Chief contributing factor to this waste is the multiplicity of units in the building trades.

Douglass Haskell, writing in the *New Republic*, sums up this interlocking system in the following words:

"A man buys a house in a real estate development. Before the deal for that house is finished, it involves so imposing a group of local real estate men, bankers, architects, contractors, subcontractors, and sub-subs that the detailed list reads like the roster of a whole Kiwanis Club. Each is a separate independent business man, to be bargained with, hired, squared, hurried, mollified, perhaps sued, perhaps paid a little extra, and so on."

Secondly, labor is inefficiently handled.

The U. S. Bureau of Labor Statistics, states *Fortune*, revealed in 1923 that "notwithstanding the persistence of the articles and interviews in newspapers and trade journals about the relative inefficiency of labor as compared with former years (before the unions came in) this bureau was unable to find a single building contractor, superintendent, or foreman who had a record of work done per man hour on jobs in progress or upon any other jobs."

Another interesting problem is presented by the suppliers of materials to the building trades. According to *Fortune*:

"They are obliged to keep in stock 1,200 to 1,500 patterns of lock hardware, 19,238 sizes of valves and pipe fittings, 139 sizes and kinds of paint brushes, 179 varieties of iron and steel roofing, 18 types of slate laundry tubs 32 thicknesses of 'one-inch' board, 400 sizes and styles of window sashes, 75 dimensions of face brick, and 150 different strength of window glass."

* * *

Standardization

Two things mass production can contribute to this foundering industry: organization and standardization.

It is wrong to presume, however, that mass production of houses or house units would be a cure-all. Taxes, real estate values, and finance methods must be adjusted to insure cheaper housing.

Mass production, however, may even enable builders to reduce these contributing costs.

The case for mass production is admirably presented in a report on Technological Developments in Volume XI of the Hoover Conference on Home Building and Home Ownership:

"Shop fabrication by a large organization has the following advantages over field fabrication:

(a) Houses can be thoroughly worked out in the laboratory so that the most suitable materials may be used; their value can be determined accurately by tests and then they can be standardized for economical manufacture in quantity.

(b) Adequate inspection and tests can be made to eliminate materials which do not meet the requirements.

(c) Machines can be developed to perform most of the operations. Practically all the handling and moving of the product during manufacture can be done by power-driven equipment—much of it automatic.

(d) The workmen can become very efficient because each is expert on a particular operation, uses power-driven equipment, and is employed under favorable conditions.

(e) Adequate inspection and tests during and after manufacture can be made to insure a uniform product which will function satisfactorily.

(f) It inherently encourages the use of better and better materials.

(g) Lost motion, waste, and damage are almost eliminated when the house is erected later on the building site because the sequence and best method of carrying out each operation are carefully determined in advance.

(h) These new houses, which will appear queer to most of us at first, will come into extensive use because of their material advantages and their lower cost. As we become accustomed to them we gradually will realize that they are beautiful because they are logical."

The cost of building houses this way, estimates the report, should be half that of conventional construction.

Disadvantages are the centralization of the industry with consequent raising of freight rates; the limiting of materials used to those inexpensive to ship when made up into units; and the similarity in architecture and dimensions of all the houses. But that —as anyone who has seen the dreary rows of identical houses in cities and suburbs—is no novelty.

What would mass production of houses entail?

The most practical proposal at the present time is for the shop fabrication of units which go to make up the finished house. We are familiar with the pre-fabrication of window and door frames; the plan is to extend this to walls, floors, and various unit parts of the house.

Each piece could be cut to exact size and marked in accordance with a plan which gives its position in the structure.

Walls can be made light and strong, room wide and story high, to be clipped or glued together on the site. They may be finished at the factory, even to interior insulation and exterior plaster or paint.

Floors may be made of panels joined together easily on the site; the same would be the case with the new flat roofs.

Stairs, dumb waiters, laundry chutes, fireplaces and chimneys would be complete units, ready for immediate installation.

It is entirely feasible that kitchen and bathroom units will be made up in factories, the only adjustment required on the site being connection of pipes and wires.

One writer visions the mass production steel house as being put together very much after the manner of a child's erector set.

Mail Order Houses

A survey made by a company which has already been organized for the production of low-priced standardized houses indicates a potential annual demand of about 250,000 units, if an attractive low-cost house can be successfully developed.

With this in mind, various experiments have already been undertaken by companies interested in mass production of houses.

Most familiar of these is the mail-order house now available through Sears, Roebuck and Montgomery Ward. These two companies not only supply the house on order, they also handle the financing of it.

Opening the Montgomery Ward catalog to the second marked "Houses," one finds several illustrations of ready-cut Wardway homes which may be ordered. These are listed under trade names, such as the "Crawford," the "Dover," and the "Potomac." Under each is the price per month: $35, $30, etc.

Proposition of the company follows: "We supply materials without any down payment. We advance additional money to help you pay for labor. All you need is your building lot and a small amount of cash if you live in a town of 800 or more. We charge only 6 per cent interest, and you need never worry about refinancing or paying exorbitant rates for a new loan after a few year's time."

Sears, Roebuck has a similar plan. From the catalog you select the house you want, suiting your own taste in various unit features, such as types of heating plants, kitchen cabinets, etc. An information blank is included in the catalog, on which the following proposal is stated:

"We are prepared to do the complete construction of any of these modern homes in all of the cities or towns served by our modern home sales offices . . . and also in many other cities in reasonable distance of our sales offices. If interested in complete construction write us and we will advise you whether we can undertake it. If not, we can tell you what it should cost."

As outlined above, the construction work is handled through district sales offices. In 1930 there were 15 Wardway Homes sales offices throughout the Middle West. These have been increased in number since then. Inquiries are also handled through local stores and salesmen, Sears, Roebuck having about 350 of the later.

When the companies receive an order for a house (references being required to determine the credit allowed), the district office in the prospective buyer's territory is notified. An investigation of the lot and the purchaser then takes place through local banks and real estate men.

If the lot is valued at 25 per cent or more of the total cost when improved, no down payment is required. Otherwise, the buyer makes up the difference in cash. Monthly payments start four months later, usually amounting to $8.56 a thousand per month. If the purchaser wishes to pay the balance due a few years later, he may take a discount of 1 per cent per year for the time yet to run on the portion of the cost representing materials.

The mail-order house supplies 90 per cent of the materials, most of them assembled into units before being delivered at the site.

* * *

Stainless Steel

A serious problem to be overcome before steel can be widely accepted for use in house building is that of corrosion, it has been pointed out by some students of modern housing.

"All the ferrous metals," says the committee on Technological Developments reporting to the Hoover Conference on Home Building and Home Ownership, "corrode, although the rate of corrosion may vary somewhat, depending upon the chemical composition. They all require the protection of metallic coatings or paint. This point should be strongly emphasized—the life of ferrous metals depends upon the degree to which the surface is protected."

Stainless steel is now offered as an answer to this charge. However, up to this time this metal has been too expensive for building purposes. The conference admits that there is a future for it, provided the price comes down.

"It seems probable that the failures of thin sheet-metal houses in the past have been due to the rapid deterioration by corrosion where moisture penetrated the joints. Stainless steel should overcome this difficulty and, as the production increases, we should expect an appreciable decrease in price . . . In sheets, it is particularly suited for the exterior surfaces of metal wall and roof aggregates, shop fabricated, ready for assembling in the field."

Possibilities of stainless steel are numerous. Norman Bel Geddes describes "a certain alloy of chromium, nickel, and iron, which is stronger than carbon steel; it may be drawn into a wire one-thousandth of an inch thick or equally well made into window frames. When polished, which it may be to a mirrorlike brilliance, it will resist for years the corrosion action of water, atmosphere, and acid. It can be finished in a matte silver, which is most attractive for exterior fittings . . . or in its polished form it can be used in the interior in a thousand ways."

* * *

Other Metals

Copper, zinc, and aluminum in sheet form are among the available nonferrous metals, and all are highly resistant to corrosion.

The use of copper and zinc has not as yet made any appreciable advance in the building of American houses, but Germany has been using the former metal as an exterior wall finish.

Aluminum is almost equal in importance to steel, as a possible material for the New Home. Advantages of aluminum were listed thus in the December, 1931, *Architectural Record*:

1. Available in quantity and in all forms known to metal work.
2. Uniform physical and chemical properties.
3. Lightness (⅓ as much as other common metals).
4. Workability.
5. Comparative low cost as a raw material.
6. Reasonable freedom from attack by elements.
7. Strength (wrought aluminum alloys with tensile strength of 60,000 lbs. per sq. in.).
8. Ease of joinery by welding and by means of screw-machine products fabricated from the same material, thus eliminating possibility of galvanic action.
9. Finish in varying shades of gray and with different surface textures.
10. Plating or coloring.

A model aluminum and glass house has been built on Long Island.

Designed for efficiency and comfort at low cost, the house was purposely made small. Ground dimensions are 22x28 ft., height 35 ft., cost only $4,000.

Structural work is entirely of metal, using aluminum and steel beams and girders in the frame. Slender aluminum columns supplant the outer walls, and these columns in turn hold cantilever beams from which the light curtain walls are suspended.

Battledeck steel construction is used in the floors, which are insulated and surfaced with rubber and linoleum.

The 3-in. thick walls consist of a layer of light insulation surfaced with corrugated aluminum sheet. The corrugations prevent glare from the sun on the exterior finished walls.

There is no basement. The ground floor is used for entrance, hallway, heating plant, and garage. It is interesting to note that one of the reasons given for doing away with the basement is that mechanical refrigeration now obviates the necessity for keeping foods cool underground.

Interior walls are made of light sheet steel. Asbestos insulation board laid over this makes the walls smooth and soundproof. The kitchen has a perforated sound-absorbent ceiling.

The living room occupies the main portion of the house, running two stories in height (second and third floors). A large window of ultra-violet glass forms one entire side of the room. Many windows are used in the house, and even the roof can be made into a sky window.

Neon tubes parallel the window tops. Lighting can be varied from white to ultraviolet to any color desired.

The dining room is separated from the living room by a movable partition. The table has a rubberized top which can be rolled up like a window shade when not in use.

Also on the second floor are a bedroom, exercise room, and bath, all separated by movable partitions.

The house also includes a library and roof garden.

* * *

Metal Interiors

Before leaving the metals, it is worth noting that many architects are visualizing possibilities of the non-corrosive metal wall used without covering or decoration as exterior and interior surfacing. The plain aluminum exterior wall of the house outlined above is an example.

Decorators claim that a metal interior wall, if not too bright, gives a pleasant reaction. Like a mirrored surface, it reflects colors (yet indistinctly, giving a kaleidoscopic effect), and increases the size of the room.

For other purposes, besides structural, metal is well adapted. Bureau of Standards experiments show that two light metal sheets with sound insulation between are superior in sound-proofing ability to the average partition.

Also, a perforated metal backed with insulating and sound-absorbing material used for the ceiling will absorb more than 20 times as much sound as a smooth plastered ceiling.

Concrete

Concrete has assumed importance as a material for house construction. Certain advantages are claimed for it—it will not crack like stone, it has permanence, and it is flexible, since it can be poured in place in any desired shape on the building site.

"Masonry houses, whether of stone, brick, tile, or concrete," says Technological Developments Committee for Hoover Home Building and Home Ownership Conference, "are strong and fire-resistant. Thermal insulation may be required but masonry walls can be made free from cracks and openings which allow air leakage. The exterior surfaces require practically no maintenance for the life of the house."

However, there are objections to the use of concrete in home building, the conference report points out. Concrete structures are expensive, due to the amount and weight of material, and the need of skilled labor to erect them. Even when fabricated in the shop, which seems desirable from many angles, the units are so heavy that freight costs would be prohibitive.

Vesicular or aerated concrete is now available. This aeration of the material lightens it and makes it a good insulant.

An example of reinforced concrete used as the sole material in a house is that of La Miniatura, Pasadena home of George N. Millard, designed and built by Frank Lloyd Wright.

This home is made of concrete blocks, knitted at the joints with steel. The concrete was poured after the joints had been set up. Walls thus become thin, solid reinforced slabs, and are made double with insulation space between.

Varying colors and perforated designs in the blocks used provide decoration for the exterior, and different designs are used on the other side of the slabs to add interest to the interior.

Related to concrete is a new material called "aerated clay." Common clay is the base used, but it is filled with gas bubbles during manufacture, giving it a cinder-like structure. It is fabricated in large slabs, weighs one-fifth as much as brick. In addition it can be sawed like wood, and a waterproofing glaze can be applied during manufacture.

* * *

Glass Bricks

Glass bricks are a novel building development. Although the price of these bricks is still too high to compete with that of ordinary bricks, many new properties are worth noting.

Two companies are especially interested in glass brick manufacture at the present time: Corning Glass Works, and Owen-Illinois Glass Co.

The bricks are intended for non-weight-bearing walls. The first ones brought out by the companies were five-sided and hollow. Finding these open-box-like bricks difficult to lay, and that moisture subsequently clouded them, the companies now make them six-sided. The inside is a vacuum to give insulating qualities.

Ordinary cement mixed with 1½ parts screened sand is used as mortar. Owens-Illinois Co. coats the bricks with cement paint on the side which comes in contact with the mortar.

The paint may be colored, giving a pleasant tinted glow to the finished glass wall.

Bricks are made of Pyrex, and are highly heat resistant. To increase light-gathering properties, the sides have prismatic ridges, placed so that it is impossible to see through the brick.

As a heat and sound conductor, the glass brick compares with clay. Crushing strength exceeds that of clay brick.

* * *

Other Materials

We have outlined just a few possibilities among all the materials available for house construction. In addition there are the old familiars, wood, brick, and stone. Rammed earth is even recommended for use in house-building under certain favorable climatic and labor conditions, having, as its outstanding advantages, low cost and permanence.

Casein products, the plastics, duralumin, are all names that will become increasingly familiar.

There are various factory-made products which may find a place in house construction. Haydite, a heat-treated clay aggregate resembling puffed rice, is one of these. It weighs less than concrete but has the same strength, can be water-proofed, and has the advantages of nailability, increased sound and heat insulation, low capillary absorption. It can be used structurally and for roofing.

Armoboard and Teestone are two fabricated units which employ concrete to a large extent.

Gypsum units may replace lath.

A new panel for walls has been developed by compressing straw, reeds, rushes, march litter, papyrus, and other vegetable fibres, and binding the resulting panels with steel wires. The trade name is Solomit, and the panel is non-inflammable, fire-resistant, hard, sound-absorbent, and sound-insulating wall material. Weight is 3 lbs. per sq. ft.

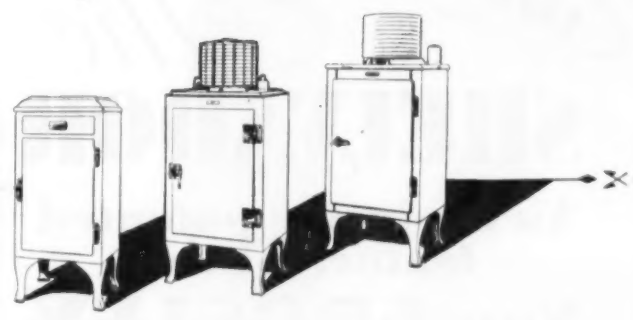
This Month

GENERAL ELECTRIC

is paying

$300,000.00

to its Refrigerator Dealers



PRICE reductions were recently announced on two G-E refrigerator models. Public response has been quick . . . dealer stocks in many cases entirely cleaned out. To protect G-E dealers' profits on stocks purchased before the price reductions, *General Electric at this time is refunding to their dealers* more than $300,000.00.

This kind of support is a typical example of General Electric's practice of dealer protection and cooperation. A General Electric franchise means *more* than protection against price reductions. It means freedom from high servicing costs and has the backing of large and effective national and local advertising and merchandising campaigns. It means greater public preference as shown by recently conducted national magazine and newspaper surveys. These surveys revealed a 3 to 1 preference for General Electric among prospective buyers of electric refrigerators. And 1 out of 3 homes using modern refrigeration today has a General Electric Monitor Top. A General Electric franchise means the reputation and prestige of the world's greatest electrical manufacturing company. It means a permanent business and greater NET profits.

Factory shipments of General Electric refrigerators continue at the rate of a TRAINLOAD A DAY! The new G-E flat-top models, priced as low as $99.50 at the factory, introduce features and quality never before available at the price. Having the traditional quality of all G-E products they set new standards of performance in popular priced refrigerators.

The General Electric dealer makes not only a refrigerator profit, but gains through every refrigerator purchaser a preferred prospect for the sale of a General Electric Range, a General Electric Dishwasher . . and eventually a complete General Electric Kitchen!

There's a General Electric Dealer plan for every size and type of retailing activity . . . from the small independent dealer with limited display in connection with another line of business, to the highly specialized, exclusive specialty selling organization. Whether a one-unit outlet or a carload operation . . . General Electric has a dealer plan to fit every individual requirement. General Electric Co., Specialty Appliance Sales Dept., Section DF-52, Nela Park, Cleveland, O.

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

C.I.T. BUYS FORD'S FINANCE COMPANY

(Concluded from Page 1, Column 5)

lationship will continue under the new ownership. It will continue to cooperate with the Ford Motor Co. and devote its entire resources to offering the 'Authorized Ford Finance Plans' exclusively for Ford dealers and Ford purchasers.

"For its interest the Ford Motor Co. will receive approximately $30,000,000. No new financing by Commercial Investment Trust Corp. will be required.

"In the transfer of ownership from the Ford interests to Commercial Investment Trust Corp., the Universal Credit Corp. will retain its identity and will be operated under its present management as a separate unit of Commercial Investment Trust Corp. Ernest Kanzler, president of Universal Credit Corp., and G. H. Zimmerman, vice president, will continue in the same positions as heretofore.

"Commercial Investment Trust Corp., with total assets in excess of $100,000,000, is the largest independent finance company in the country.

"Its total volume of business last year amounted to $317,397,520, and will be considerably increased by the acquisition of Universal Credit Corp., which last year handled more than $100,000,000 of business.

"Founded 25 years ago, Commercial Investment Trust Corp. now operates 135 offices in cities throughout the United States and Canada, with executive offices in New York City, Chicago, San Francisco, and Toronto. Its subsidiaries in charge of automobile financing are Commercial Investment Trust Corp. and Canadian Acceptance Corp., Ltd."

"Our experience with Universal Credit Corp. has been very satisfactory," said Henry Ford in making the announcement. "We set out to reduce the cost of credit to the car buyer, and we feel that we have succeeded. During the five years since its inception the Universal Credit Corp. has done over a billion dollars worth of business.

"The reason we are selling the finance business is very simple. We are essentially manufacturers, and the finance company is essentially a banking business. We wanted to separate the two.

"In seeking new owners for the Universal Credit Corp. we insisted on financial stability, thorough experience in the business, and a willingness to follow Ford policies already established. We feel we have found all those in the Commercial Investment Trust Corp., and that Ford dealers and purchasers of Ford cars will get the same service from them as they have had from us."

McElhinny to Manage Frigidaire Dept.

(Concluded from Page 1, Column 4)

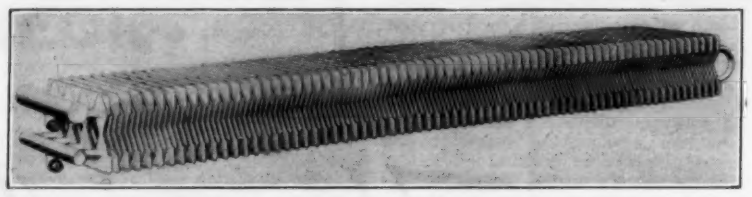
sales manager in charge of the Eastern half of the United States, and later became commercial sales manager.

His first sale was to Pierre S. Du Pont, at that time chairman of the board of General Motors; his second, to John J. Raskob.

Known as the first man ever to sell a million dollar commercial refrigeration order, Mr. McElhinny always has been close to the field for commercial products. He is widely known in the refrigeration industry and by grocery, meat, ice cream, and many other trade groups of the nation, having appeared at national conventions as the representative of the refrigeration industry.

In heading up the sales activities of the commercial refrigeration division of Frigidaire, Mr. McElhinny will be assisted by H. F. Lehman, formerly service manager of the corporation.

New Frigidaire Commercial Coil



Features flooded operation with an expansion valve.

* * *

DIAMOND FIN COILS ARE DEVELOPED BY FRIGIDAIRE

(Concluded from Page 1, Column 1)

larger installations under previous recommendations. On the average, the new type coil means an ultimate price reduction to the customer of 25 per cent of the retail selling price," H. W. Newell, vice president in charge of sales, said.

The new evaporator was developed in Frigidaire's research laboratories, according to Mr. Newell. It is, in effect, a new principle of commercial refrigeration, since it combines advantages of both the flooded and direct-expansion systems. It is an expansion coil in the sense that liquid is admitted to the coil by an expansion refrigerant control valve, yet a flooded condition is maintained in the tubes of the evaporator, giving positive refrigeration with maximum heat absorption.

CUTLER-HAMMER RAISES ALL SALARIES 5%

MILWAUKEE—Following President Roosevelt's suggestion, Cutler-Hammer, Inc., manufacturer of refrigeration controls, has just granted a 5 per cent increase in salary to all employes.

Servel Hermetic Line Styled; All Prices Are Lowered

(Concluded from Page 1, Column 1)

included, with prices on corresponding models in the old line, are as follows: 4.2-cu. ft. net—$129.50, formerly $174.50; 5.5-cp. ft. net—$155, formerly $184.50; 6.2-cu. ft. net—$175, formerly $217.50; 8.3-cu. ft. net—$230, formerly $348.50; 11-cu. ft. net—$290, formerly $405; 13.1-cu. ft. net—$350, formerly $471.50.

Three models in the new hermetic series are offered with porcelain exteriors at slightly higher prices. The 5.5-cu. ft. net model in this series sells for $170; the 6.2-cu. ft. model for $192.50; and the 8.3 cu. ft. for $250.

The Crusader line, using a conventional-type compressor, now starts at $99.50 (a 4.6-cu. ft. model which formerly sold for $112). Prices of other models in this line are as follows: 5.1-cu. ft. net—$130, formerly $137.50; 6.1-cu. ft. net—$145, formerly $150; 7.1-cu. ft. net—$165, formerly $180; 8.6-cu. ft. net—$210, formerly $230. No changes made in Crusader design.

WINDEL DESIGNS & BUILDS DRAFT BEER COOLER

SPRINGFIELD, Ohio—When Carl Windel, commercial sales manager for the Copeland Distributing Co. here, couldn't get delivery on beer cooling equipment for his prospects in time to meet the rush of days of legalization, he turned manufacturer and built a draft beer cooler

The cooling cabinet and dispenser is a two-tap model which will cool 8 gal. per hour from keg storage temperature to 40° F. Two 42-ft. block tin beer coils are placed in a 12-gal. Copeland-cooled sweet water bath.

G. E. DEMONSTRATES REFRIGERATED TRUCK

(Concluded from Page 1, Column 4)

for loading a total bulk capacity of 315 gallons of ice cream.

The refrigerating system consists of a G. E. refrigerating unit with completely automatic control. Power for refrigeration en route is supplied from the engine and can be supplied from outside power circuits at garages or loading platforms.

The all-metal body has an inner frame of wood. It has rounded corners, roll-edged roof, and flush-seating doors with chrome-plated hardware. The sides offer a large, clear panel space for advertising purposes.

The insulated refrigerated compartment has inside dimensions 70 in. long, 60 in. wide, and 35 in. high. Hardwood floor racks and shelf provide for loading of 42 5-gal. cans below, and 42 2½-gal. cans on the shelf, a total bulk capacity of 315 gal. of ice cream.

The sheet-metal liner is smooth (no evaporator obstruction) with rounded corners, with air- and moisture-tight seams. The floor, flush with door openings, provides ease in handling the load and in flushing out. Maximum accessibility is attained by heavily constructed, three-step wood frame doors, one on each side of the body.

The large, well ventilated and well drained empty-can compartment at the rear is also provided with hardwood racks.

The refrigerating system consists of an alternating-current motor-driven refrigerating unit mounted in the machinery compartment.

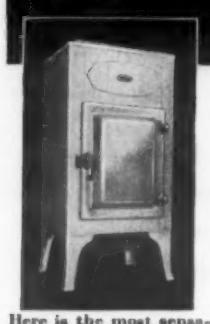
Operation is automatic, under thermostatic control. Temperature is maintained at 0° to 8° F., or is adjustable to suit requirements.

Power is supplied en route by an alternating-current generator mounted in the machinery compartment, and belt-driven from transmission power take-off. In the garage, or at a loading platform, power is taken from a 60-cycle, 220-volt, single phase circuit. load, is 2,700 lbs.

Cooling coils are mounted on the exterior of the refrigerated compartment walls. This construction provides a clear, unobstructed interior and prevents damage to the tubes.

The weight of the body complete, with racks and all machinery but less load is 2,700 lbs.

HERE'S THE SALES CLINCHER YOU'VE BEEN LOOKING FOR!



Here is the most sensational selling feature ever thought of in ELECTRIC REFRIGERATION . . . the most sensational advance in cabinet design since the first ice-box was brought out . . . a feature so self-evident, so new, so convenient and helpful that every housewife after one glance will say: *"That's what I must have!"*

The Shelvador doesn't need explaining. One glance and the story is told. What a show-room and show-window feature!

With the Shelvador you're a mile ahead of competition. You have something every housewife wants in her new electric refrigerator or is sorry she hasn't in her present one.

Increases "Usable" Capacity 50%

Shelvador actually makes the "small" refrigerator "larger" by increasing the "usable" space. It saves the annoyance of "feeling around" for small, hard-to-find objects . . . puts them where they are easily reached.

The SHELVADOR

U. S. PATENT 1898922

An exclusive patented feature of the New CROSLEY Electric REFRIGERATOR

Only Crosley Offers It

And remember—only the Crosley Electric Refrigerator can use the Shelvador; for it is an exclusive, patented Crosley feature. Insulation is not sacrificed in the Shelvador—the exterior of the door is extended to permit the use of a standard thickness of insulation.

In addition to the Shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it even better. See your nearest Crosley distributor or write direct to factory.

MODEL D-35 NET contents — 3½ cubic feet. Shelf area—8 square feet. Overall Dimensions: Height, 50¾"; Width, 23¾"; Depth, 24"; Leg Height, 10⅞" No. ice trays, 2; No. ice cubes, 42.

WITH SHELVADOR $89.50

MODEL D-45 NET contents — 4½ cubic feet. Shelf area—10.6 square feet. Overall Dimensions: Height, 56⅛"; Width, 23¾"; Depth, 24"; Leg Height, 10⅞" No. ice trays, 3; No. ice cubes, 63.

WITH SHELVADOR $99.50

MODEL D-60 NET contents—6 cubic feet. Shelf area—11.5 square feet. Overall Dimensions: Height, 57½"; Width, 29½"; Depth, 25¾"; Leg Height, 10⅞"; No. ice trays, 3; No. ice cubes, 63.

WITH SHELVADOR $130

ALL PRICES INCLUDE DELIVERY..INSTALLATION..ONE YEAR FREE SERVICE

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher.

The Crosley Radio Corporation - Cincinnati

POWEL CROSLEY, Jr., *President.* The Home of *"the Nation's Station"*-WLW

CROSLEY Electric REFRIGERATOR WITH SHELVADOR

U. S. PATENT 1898922

Streamlined Cabinets Used on DeLuxe Models by O'Keefe & Merritt

(Concluded from Page 1, Column 3)

this refrigerator has 5 cu. ft. of net storage space, and a shelf area of 9.8 sq. ft. It makes 56 cubes at a time.

Offered at $149, model 60 has 6-cu. ft. net storage capacity and a shelf area of 11.2 sq. ft. Its three trays supply 84 ice cubes per freezing. Its cabinet, too, is of conventional design.

Model 458, another conventionally styled model, has a net storage space of 4 cu. ft., a shelf area of 6.8 sq. ft. It has two ice trays making 56 ice cubes. Its price is $119.

Smallest of the four deluxe models is No. 508. Its net storage capacity is 5 cu. ft., its shelf area 9.8 sq. ft. It has two trays making 56 ice cubes at one freezing, and is priced at $159.

Next model is 610, priced at $179, has 6 cu. ft. of net storage space and a shelf area of 11.2 sq. ft. It has three trays with a capacity of 84 ice cubes.

Model 712 has a net storage capacity of 7.23 cu. ft. and a shelf area of 12.2 sq. ft. It supplies 112 ice cubes per freezing, and sells for $199.

Largest of the deluxe models is No. 1017, a two-door refrigerator with twin evaporators. Priced at $295, it has net storage capacity of 10.20 cu. ft. and a shelf area of 16.5 sq. ft. Its six ice trays make 168 ice cubes at a time.

The four deluxe models are equipped with electric lights, vegetable trays.

Specifications of the line are:

* * *

Model No.	40	50	60	458	508	610	712	1017
CABINET SPECIFICATIONS								
Overall Dimensions (in.)								
Height	55	59	60	55⅜	58	59	62	62
Width	24	25	28	22	26	29	31	42
Depth	23	23	23	21	23	23	23	23
Inside Dimensions of Liner (in.)								
Height	25	29	30	33	29	30	33	33
Width	18	19	22	16	19	22	24	35
Depth	17	17	17	15¼	17	17	17	17
No. of doors	1	1	1	1	1	1	1	2
STORAGE CAPACITY								
Net food storage (cu. ft.)	4.0	5.0	6.0	4.30	5.0	6.0	7.23	10.20
Gross food storage (cu. ft.)	4.42	5.42	6.43	4.66	5.42	6.43	7.73	11.36
No. of shelves	4	5	5	4	5	5	5	8
Total shelf area (sq. ft.)	7.0	9.8	11.2	6.8	9.8	11.2	12.2	16.5
ICE CUBE TRAYS								
No. of trays	2	2	3	2	2	3	4	6
No. of cubes produced	56	56	84	56	56	84	112	168
Weight of cubes (lbs.)	3½	3½	5¼	3½	3½	5¼	7	10½
THICKNESS OF INSULATION (in.)								
Top	3	3	3	3	3½	3½	3½	3½
Sides	3	3	3	3	3½	3½	3½	3½
Bottom	3	3	3	3	3½	3½	3½	3½
COMPRESSOR SPECIFICATIONS								
Motor size (hp.)	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/4
Compressor speed (r.p.m.)	340	340	340	340	270	270	270	270
Compressor bore (in.)	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½
Compressor stroke (in.)	1	1	1	1	1¼	1¼	1¼	1¼
No. of cylinders	2	2	2	2	2	2	2	2
PRICE, Los Angeles list	$99	$129	$149	$119	$159	$179	$199	$295
WEIGHT (net lbs.)	275	300	325	270	375	425	460	575

* * *

CABINET MATERIALS

Make of cabinet.....O'Keefe & Merritt
Material used for frame.....Wood
Finish of shelves.....Tinned
Materials used for breaker strip..Panelyte
Material used for gasket..Moulded rubber
Make of gasket.....Goodrich
Make of insulation.....Insulite

FINISH

Cabinet finish (exterior).....Lacquer
Cabinet finish (interior).....Porcelain

MOTOR

Make of motor.....Wagner
Type of motor.....Repulsion-induction

COMPRESSOR

Make of compressor....O'Keefe & Merritt
Type of system.....Conventional
Type of compressor.....Reciprocating
Compressor drive.....Belt
Type of shaft seal.....Sylphon bellows
Location of compressor.....Below

CONTROL

Make of control.....Ranco
Type of control.....Temperature
Temperature regulation method....Manual
How defrosted.....Semi-automatic

LUBRICATION

Brand of compressor lubricant.....Argon
Quantity in system.....Models 610, 712, & 1017—1 pt.; others 2/3 pt.
How often should motor be oiled...Every three months

REFRIGERANT

Refrigerant used.....Methyl chloride
Amount in system (lbs.)...Model 610—1¾; model 712—3¼; model 1017—2¾; others—1½

CONDENSER

Make of condenser.....Bush
Method of cooling.....Fan
Type of condenser.....Fin tube

EVAPORATOR

Make of evaporator.....O'Keefe & Merritt
Evaporator construction.....Shell
Metal used.....Steel
Make of expansion valve.....Detroit Lubricator

HARDWARE

Make of hardware.....Models 40, 50, 60 & 458—Grand Rapids Brass; others—O'Keefe & Merritt
Process of manufacture....Models 40, 50, 60, & 458—stampings; others—die-cast
Basic metal of hardware...Models 40, 50, 60 & 458—brass; others—alloy
Finish of hardware.....Chromium

SPECIAL FEATURES

Models 508, 610, 712, & 1017—Electric light, vegetable tray, and built-in thermometer.

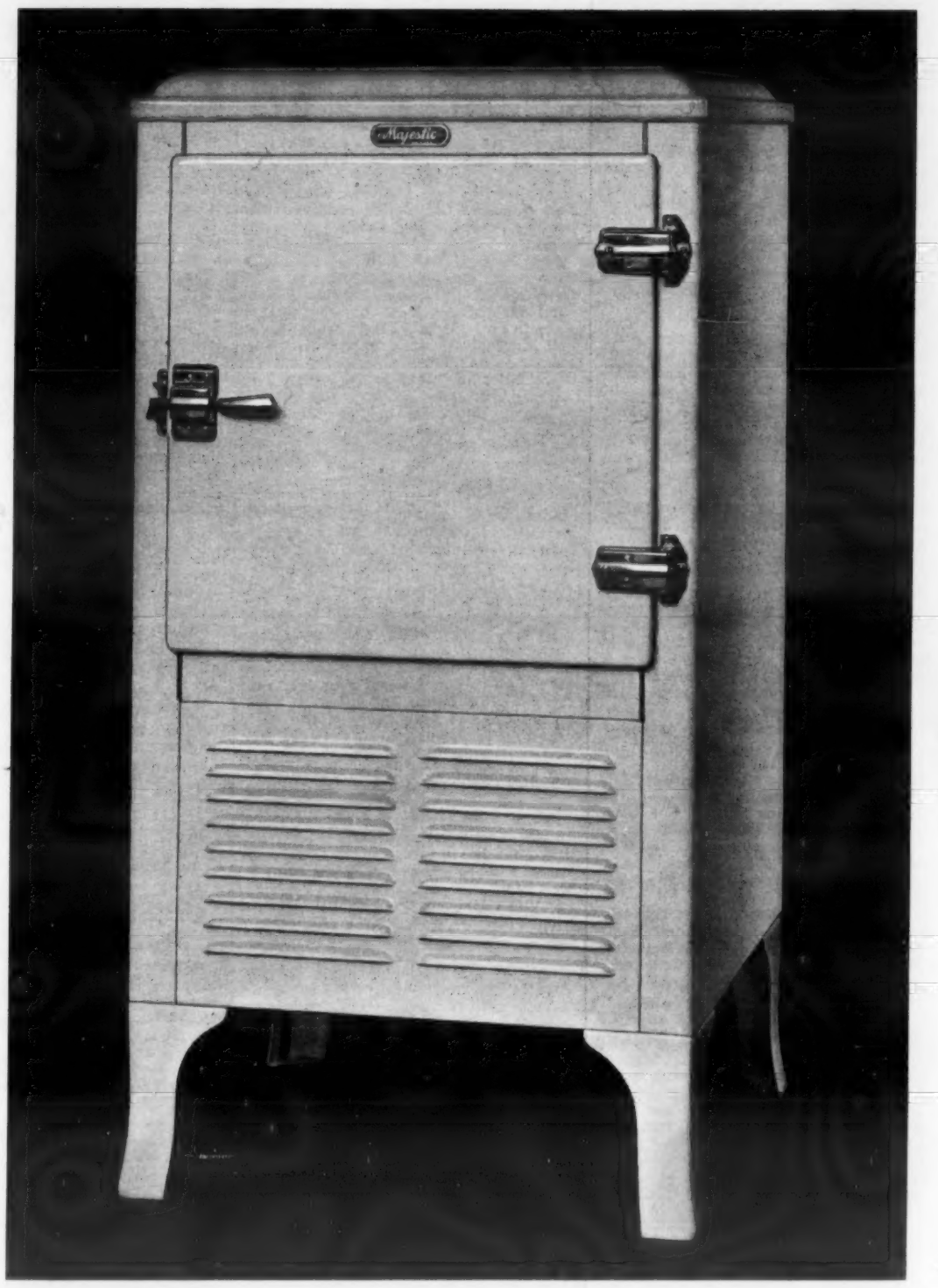
POLICY

Guarantee on cabinet.....1 year
Guarantee on system.....1 year
Serviced by.....Factory
Are replacement parts sold to independent service companies.....Yes

A MAJESTIC

FOR $89.50

F. O. B. Factory
Tax Paid



MODEL 400 - CENTURY LINE

EVERY inch a Majestic! That's the verdict on this new Century Model 400. Majestic-built throughout, with the famous Majestic rotary compressor. Elasto finish, proof against marring and chipping, identical with that used on highest-priced Electro-Sealed models. . . . *A Majestic at a sensational price!* For $89.50 the Majestic dealer can deliver a truly *fine* small refrigerator, of Majestic quality, backed by the Majestic name. . . . *Rounding out a complete line!* With this new Model 400 and its companion Century Model 450, selling for $99.50—and with the unsurpassable Electro-Sealed COLD DOME models—Majestic dealers can *sell refrigeration* to fit the pocketbook of every prospect.

Majestic Quality • Sensational Value

A fine, practical *small* refrigerator. And a *big* value. Food storage space, 8.5 sq. ft. Height, 45 9/16 in.; width, 24 3/16 in.; depth (over hardware), 22 7/8 in. 2 ice trays, 42 ice cubes, 3 3/4 lbs. of ice per freezing. Majestic Rotary Compressor. Economical operation. Genuine Elasto exterior finish. Stainless porcelain interior.

GRIGSBY-GRUNOW COMPANY, Chicago,
and affiliates, with factories at Chicago; Toronto; Bridgeport; Oakland; London, England; and Sao Paulo, Brazil

Majestic
ELECTRO-SEALED
REFRIGERATION

INTERVIEWS

BY ELSTON D. HERRON

Sparks-Withington Busy

Arriving in Jackson at 3 o'clock in the afternoon, and before starting out to see dealers, your reporter went out to the Sparks-Withington Co., manufacturer of Sparton refrigerators. Guy C. Core, the company's advertising manager, said that the Sparton plant is between 70 and 80 carloads behind orders, even though it is operating on a 24-hr. schedule.

On May 9, 275 men were working at the factory, and the management expected to have 400 working by this week. They were turning out about 125 refrigerators a day, Mr. Gore said. Sparton sales are heaviest in the East —New York City, Philadelphia, Boston —he declared.

One of the first things we noticed was that the company's general offices seemed pretty much deserted as compared with what they had been on previous calls. "Quite a few of our men are in the East holding sales schools," Mr. Gore explained, "and then we aren't employing as many office people as we were when you were here in the winter. We're doing our hiring at the factory."

Sparton sales began picking up in March, and have been on the increase ever since, the advertising manager said.

We told him that we had never met Captain William Sparks, the company's president. It was the captain's birthday, and he was busy, but he let us into his big office for a pleasant talk of 20 minutes or so.

Captain Sparks is a big, bronzed man who likes work and lots of it. When he isn't busy with his managerial duties, he likes nothing better than to get into one of his company's laboratories and experiment with all sorts of things. Captain Sparks bases a lot of his business moves on past experience. Before he makes any decision, he looks back through the 34 years he has been in business and tries to profit by the things those years have taught him.

It is his opinion that the leaders in the refrigeration industry should get together and work out a plan to stop once and for all the work of fly-by-night organizations which turn out inferior products and cut prices unreasonably.

"If we don't, he said, "the price-cutters will do to us just what they did to the radio industry. An industry bothered by such competition can't stay healthy, because when a manufacturer makes too cheap a product, either the buyers or the company's stockholders are going to take a beating."

Later, while talking about the economic condition of the country, he remarked that "the United States is just one big laboratory with 120 million workers in it, trying to find just what is the best way to recovery."

• • •

Jackson Dealers Want Shipments

Jackson has a population of about 52,000. It has one small bank open, but the largest one is operating under a conservator and has paid only five per cent on deposits since it closed some time ago. The town lives chiefly on its more-than-a-dozen automobile parts factories and a large underwear factory that employes between 700 and 800 people. A few of the auto parts plants have been moved away from Jackson in the last year, but most of the rest are working on fair schedules.

Refrigeration dealers in Jackson are doing a nice business, and most of them attribute it to the fact that people would rather buy *things* with their money than save it since the big bank closed.

• • •

Gathmann Hires First Field Salesmen for the Season

First store visited was that of the Gathmann Sales Co. at 224 West Michigan St. H. F. Gathmann, the proprietor, said that he was a Copeland dealer for three years, and is starting his fourth year now as a Copeland distributor. He is just beginning to hire field salesmen and make a drive for dealers in his territory. He said, "If the factory will just give us plenty of machines, we can sell them."

On the sales floor were four Copelands, all of them marked "Sold." Mr. Gathmann said, "Those are the first new Copelands we've had this year. We got them last week, and sold them right away."

"Did you sell any of them for cash?"

"Three of them," he said, "and of the four, two of them were sold from pictures." Mr. Gathmann sold two of the units, and his wife sold the other two. During the past three years, Mrs. Gathmann has kept shop while her husband worked outside. Buyers of the four Copelands were an apartment house manager, an office manager, a captain of the State prison guards, and a railroad engineer.

Mr. Gathmann estimates that he will sell 200 units altogether this year—125 of them at wholesale and 75 at retail.

"What did you do during the first four months of this year?" we asked him. "You didn't have any household jobs to sell."

"I got out and worked my commercial business. Since Jan. 1, I've sold 12 Copeland commercial compressors and McCray display cases."

This dealer finances his time-payment sales through the Associates Investment Co. He has his own department for installing and servicing the refrigeration equipment he sells.

• • •

Norge & Ice-O-Matic Move Fast

Down the street a block at 152 West Michigan is a branch of the Grinnell Bros. music stores. This branch handles Norge, Ice-O-Matic, and Grinnell. The manager is J. J. Haffey. This dealer's four outside salesmen have sold 25 refrigerators since the first of the year, four of them for cash, and down payments on the rest have been larger than in the other four years of the store's refrigeration business. The store handles its own paper.

Mr. Haffey expects to sell 75 units this year, and said that Norges and Ice-O-Matics have been moving faster than Grinnells. Most of this year's sales have been made to working people, Mr. Haffey said. People with incomes of about $30 a week. Most of them have bought 6-cu. ft. units.

The store advertises its refrigerators regularly in both of the Jackson papers, and the manager is confident that his refrigeration sales volume this year will be at least slightly greater than it was last.

• • •

Frigidaire Shipments Slow

In the window of the Consumers Power Co. were nine Frigidaires, so we went inside and talked to B. A. Jorgenson, who is in charge of appliance merchandising in the Jackson branch of the utility company. Mr. Jorgenson has just one complaint about the company's refrigeration business—they can't get Frigidaires in fast enough to fill their orders. He pointed to the nine units in the window and said, "All those are sold but two of the standard four's."

Because of company policy, he couldn't tell the exact number of units sold this year, but said that April sales were 200 per cent greater than those of the same month last year, and that he expects this year's business to be considerably larger than it was last.

"Who's buying refrigerators this season?"

"People with moderate salaries," he said—"government employes, railroad employes—people who were pretty careful about holding on to their money until the bank trouble."

Most of the Frigidaires sold by the company's five salesmen this season have been of the 6- and 7-cu. ft. size, Mr. Jorgenson told us. His company handles Electrolux units, but hasn't pushed their sale as much as electric refrigeration.

• • •

15 Michigan Branches

Mr. Jorgenson suggested that we might get a good picture of electric refrigeration sales in all of the Consumers Power Co. branches by talking to H. H. Davis, supervisor of appliance sales in all towns where the utility has stores. Consumers Power Co., Mr. Davis said, has branches in 15 Michigan cities—Pontiac, Flint, Saginaw, Bay City, Elma, Owosso, Lansing, Kalamazoo, Battle Creek, Hastings, Grand Rapids, Muskegon, Cadillac, Manistee, and Jackson. Headquarters of the company are in Jackson, too.

Eleven of the branches handle Frigidaire; four of them have Kelvinator. Some of the branches have stores operating under supervision of the branch headquarters.

Mr. Davis said that total refrigerator sales for all branches in April were 50 per cent ahead of last year's figure. The salesrooms have all had more walk-in business and more cash sales than ever before. This man was confident that this season's sales will exceed last year's, providing the branches can get enough units to fill their orders. Right now, they're 'way behind.

Most popular sizes: sixes and sevens, but the branch managers tell Mr. Davis that they can sell any size refrigerators he'll send them.

• • •

13 G. E.'s Sold Since May 1 By Caswell Branch

When your reporter walked into the General Electric Store (a retail branch of Detroit's G. E. distributor, Caswell, Inc.), he found P. O. Dettling, the manager, almost caressing two new refrigerators that had just been uncrated. The jobs were the new 4.7-cu. ft. and 7-cu. ft. models of the 10-star line.

May has been a good month for the G. E. people in Jackson. They had delivered 13 refrigerators since May 1, when we called on May 10, making a total of 38 for this year. "And two out of every three have paid cash or bought their units on a 90-day basis," Mr. Dettling said.

He has hired an extra delivery man, and some new part-time office help, and expects the rest of May and June to be highly profitable. He summed up this year's activities like this: "Our first three months were pretty bad. May will put us out of the red for the year, and if things continue as they are now, we'll show a nice profit in June."

Eight salesmen are working for the store, four of them on refrigeration exclusively. Another man devotes all his time to commercial sales, but Mr. Dettling admitted that the commercial business hasn't been so good lately. The store's quota for this year is 86 refrigerators, and the manager has little doubt about making it. He is well fixed to take care of deliveries right now, as he has a stock of 25 models of various sizes.

"It's the people in the lower income brackets who are buying this year," Mr. Dettling remarked. "They're a little leery about putting their money in the banks, they don't care to hoard what they have because they think times are improving, and so they buy something they've wanted for a long time. Just last week, a woman walked in, spotted a refrigerator she liked, and laid down $100 in gold as the down payment." The 7-cu. ft. boxes are going best, he remarked.

The store is running an advertising campaign in the local papers this month, telling readers that "there are 1,000 users of General Electric refrigerators in Jackson county."

• • •

Publicity-Minded Grunow Dealer

The Jury Rowe Co., a furniture store, has just entered the refrigeration retail business with the Grunow line. The manager and junior partner, C. F. Sternburg, is all hepped up about electric refrigeration's sales possibilities.

"We haven't done so awfully bad, considering that we're new in the business," he started out. "In six weeks, we've sold nine Grunows, and they were all floor sales. One was for cash, three were on a 90-day basis, and on the rest, we got good-sized down payments. It's the wage earners who are buying. I sold one unit yesterday to a type-setter, and three of our other sales were to employes out at the prison. We're getting a late start, but if we don't sell 100 refrigerators this year, we'll be mighty disappointed."

The 6-cu. ft. units are the best sellers, Mr. Sternburg said. When we called, the store had three Grunows in stock, and was trying to get more from its distributor. The organization handles its own time-payment sales.

Mr. Sternburg knows the value of good publicity, and is always watching for a new stunt to atttract attention to his store. This week he's bringing Leo, the Metro-Goldwyn-Mayer lion, to the store, and is featuring Grunow refrigeration at the animal's twice-daily performances. "Early in November of 1929, we put two young lions on display here at the store, and offered prizes to the people suggesting the best names for the pair. Crowds flocked to the store, and we did the biggest day's business in the history of the company," Mr. Sternburg related.

The sales promotion stunt he likes best to tell about is the one he staged in 1927. Just before Christmas of that year, he paid $1,600 to bring a couple of reindeer to Jackson, and had a nice plump Santa Claus drive them through the streets and up to the store. Schools were dismissed, traffic was blocked for several hours, and police estimated that 40,000 people were in and around the furniture store. A trick like that is what Mr. Sternburg calls a "natural."

• • •

Utility Cooperates With Dealers

In talking to these dealers in Jackson, one thing was particularly noticeable—most of them had nothing but good things to say about the local utility (Consumers Power Co.) and its refrigeration merchandising activities. They seemed especially appreciative of the utility's offers to cooperate with them in any way possible, and said that the management has never given them cause for accusation of "unfair competition."

One dealer said that the utility has lost a few sales to other outlets because it has cut its employes' salaries without reducing rates, and another said that the utility was sometimes criticized for allowing its employes to buy appliances at a discount for friends.

We had hoped to call at the L. H. Field department store, where Kelvinators are sold in Jackson, but didn't have time before the train left for Elkhart, Ind., our next stop.

• • •

Elkhart Prays for Sunshine

From all we could learn, Elkhart isn't in such good shape from a business standpoint right now. It has one bank open, and two which closed on Feb. 27 are running on a restricted basis — paying out two per cent a month on commercial deposits, but nothing on savings.

All of the city's band instrument factories are operating on a short-time schedule. The Adams Westlake Co., manufacturer of railway supplies, now has just a clerical force working, while a year or so ago it employed 500 men. Time-O-Stat Co., which made controls, was purchased by the Minneapolis-Honeywell Co. and moved out of the city. In 1929, the New York Central terminal shops were closed, leaving 900 men jobless, and haven't been opened since. Incidentally, Elkhart boasts that 75 per cent of its 7,000 families own their own homes.

Having learned all this before our calls on any dealers, we were naturally curious to find out just what effect the general business condition was having on electric refrigerator sales.

First call was at Robertson's Store at 522 South Main St., where we talked to W. H. Robertson, the proprietor. He handles Norge and Majestic refrigerators, and a line of radios and washers. He handled Kelvinator, too, until a short while ago, but is giving it up.

"How's the refrigeration business?"

"Not bad," was his answer, "but it would be a lot better if we could have some decent refrigeration weather. We haven't had a warm, sunshiny day this spring."

Of the sales he has made this year, 50 per cent have been for cash. He told me that 6-cu. ft. units are the best sellers this year, and that he expects to make more sales in 1933 than he did in 1932. This dealer has one outside salesman working on refrigeration, handles his own paper, and does his own installing and servicing. He spends about $200 per year in direct mail, radio, and newspaper advertising on refrigeration. He has been in the refrigeration business three years.

• • •

Thrifty People Buy Lacquer Jobs

On a nicely shaded street a block or two away from Elkhart's main business district is the Buick-Pontiac-Frigidaire dealership of Harvey-Wambaugh, Inc., 618 South Third St. This organization has been selling Frigidaires for two years.

We walked inside and met one of the managers, L. B. Nelson. It took Mr. Nelson about 30 seconds to tell how his company is doing in refrigeration sales. Here are his words: "As far as general business is concerned, Elkhart is in poor shape right now. But listen. We could sell Frigidaires and plenty of them if we could get them in stock and if the sun would start shining for a change!"

Mr. Nelson pointed at the three new all-porcelain Frigidaires in the show window. "I don't mean porcelain jobs. I mean lacquer ones. If we could get them, we could install eight 6-ft. lacquer boxes tonight."

He explained then that the people of Elkhart are noted for their thriftiness, that they are the type who don't see the necessity for spending extra money to get a porcelain *exterior* on a refrigerator when it's the machine *inside* that keeps the milk from spoiling. Four Elkhart attorneys have placed orders with the dealership for 6-cu. ft. units in the standard line, and are waiting for them to be delivered, Mr. Nelson said.

So far this year, the company has sold *and delivered* three Frigidaires, and expects to sell 30 or more before the end of the year. One salesman works outside on refrigeration, and is finding that the wage-earning class of people is supplying the best prospects.

The dealership has also sold two commercial compressors this year—one to a restaurant and one to a grocery store. It handles its own financing of sales and maintains its own department for servicing and installing the refrigerators it sells.

"Have any of your sales been for cash?"

"We haven't sold any refrigerators for cash this year, but we've sold three $2,100 Buicks and four Pontiacs for cash," he said. If you're thinking of buying a new car, you can take this for what it's worth. Among other things he said about the automobile business, Mr. Nelson remarked that he expects car prices to take a 25 per cent jump in the next few weeks.

• • •

New Dealers With New Products

Before the Harvey-Wambaugh company took on the Frigidaire line two years ago, the line was handled by Ohmer's Electric Shop at 222 South Main St. When we called at Ohmer's, the dealer had just signed the Grunow franchise, and had its first unit of the Grunow line on the floor.

C. R. McMurray, who installs and services all washers and oil burners sold by the company and will service refrigeration from now on, said that the dealer is putting on three outside salesmen to sell Grunows in Elkhart.

Ohmer's, of course, hadn't made any refrigerator sales yet when we talked to Mr. McMurray, but he did say that the store has done a nice business in washers this spring, and that three people—a lawyer, policeman, and shoe repair man—have paid cash for their machines.

Another Elkhart store just starting in the refrigeration business is Berman's Sporting Goods Co. It has the Crosley line. Ben Sive, the store manager, said he had nothing to report so far except that he's going to push Crosley plenty hard this year. He thinks the man who thought of the Shelvador was an inspired being.

• • •

Haven't Seen Any New Copelands

At the Wilbur Templin Store, Copeland dealership at 415 South Main, things were humming. This place is primarily a music store, but had Copeland refrigerators in both show windows.

Wilbur Templin is owner and manager of the Elkhart store, and operates a branch at 115 South Main St. in Mishawaka, near South Bend. Manager of the Mishawaka branch is 22-year-old Wilbur Templin, Jr., out of Dartmouth just a year. He had just come to Elkhart to talk business with his father, so while we waited for Mr. Templin, Sr., to come to the store, the two of us talked business.

"How do you like the 1933 Copeland's?" was the first question.

"We don't know," was young Wilbur's answer. "We've been selling 1932 Copelands so far this year. You see we bought a lot of last year's models early in the season, and we've been selling them at reduced prices." (They are selling the 1932 7-cu. ft. Copeland for $138.)

"How many have you sold this year?"

"In our two stores, we've sold 45 so far (May 11). We've got five units left in Mishawaka, five here, and we've got our order placed at the factory for eight more 1932 models and six 1933's. We figure we'll sell 150 units this year in both stores. Last year we sold just 30."

"You must have some good outside salesmen working for you," we remarked.

"Nope. We haven't any outside salesmen. We've just done a lot of newspaper advertising, and some radio, and people have come to our stores of their own accord. Occasionally my dad and I go out to sell a prospect a refrigerator, but not often."

We asked if any of the stores' sales had been for cash. "Yes. Cash sales in Elkhart have shown some increase, and seven out of the 14 sales I made in Mishawaka in April were for cash. People like doctors, office workers, and newspaper employes are doing most of the buying."

Seven-cu. ft. models have been the best sellers at the Templin stores this year. All of the stores' instalment sales are handled through the Associates Investment Co. Each store has one man to do installing and servicing in its territory. When Mr. Templin, Sr., came in, we met him, and learned that he's been selling Copelands in his two stores for seven years. He said that his son knew as much about the refrigeration business as he did, and then went on to wait on a pair of customers.

• • •

Utility Quits Merchandising Refrigerators

Several Elkhart dealers had suggested that we go over to the Indiana & Michigan Electric Co. and talk to K. F. Mudge, the company's commercial manager, who is in charge of a cooperative plan of selling used by all the refrigeration dealers in town.

The utility handled General Electric refrigerators until Feb. 1 of this year, when it announced to all dealers there that it was "fulfilling the pledge it made several years ago to discontinue electric refrigeration merchandising when the pioneering work in that activity was completed." Right now, G. E. isn't represented in Elkhart.

Mr. Mudge said that the utility employs two men to canvass all homes in Elkhart, and find out what residences aren't equipped with electric refrigeration. They turn in a list of all *good* prospects to Mr. Mudge. Every Wednesday morning, all Elkhart dealers meet at the electric company's offices, and Mr. Mudge divides the prospect names among them. Each dealer is given two weeks to sell refrigerators to the prospects on his list. If he hasn't succeeded at the end of that time, the names of the prospects are given to another dealer.

So eventually, the names of all prospects who have repeatedly refused to buy are in the hands of all dealers in town. The company advertises refrigeration regularly, too, to help the dealers. Once a month, the dealers report to Mr. Mudge the names of all persons who have bought refrigerators. The company's home economist then calls at the home of each new owner and teaches her some new things about using an electric refrigerator.

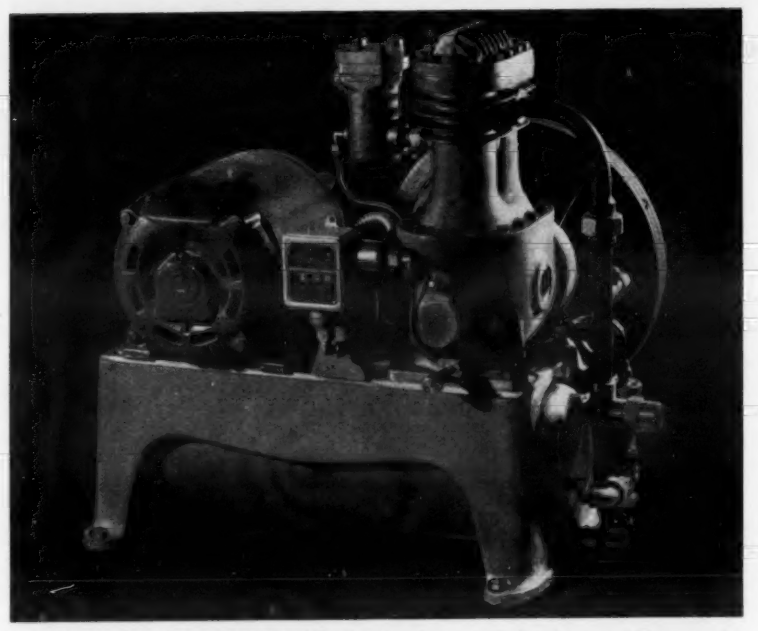
"That's the best way we've ever found to keep housewives using their refrigerators all the time," Mr. Mudge said.

He repeated what we had heard several times before that day—that the weather has been against refrigeration sales this year, but added that sales for the whole town during the first 10 days of May were better than for the same time last year. He estimated that about 50 refrigerators have been sold in Elkhart this year.

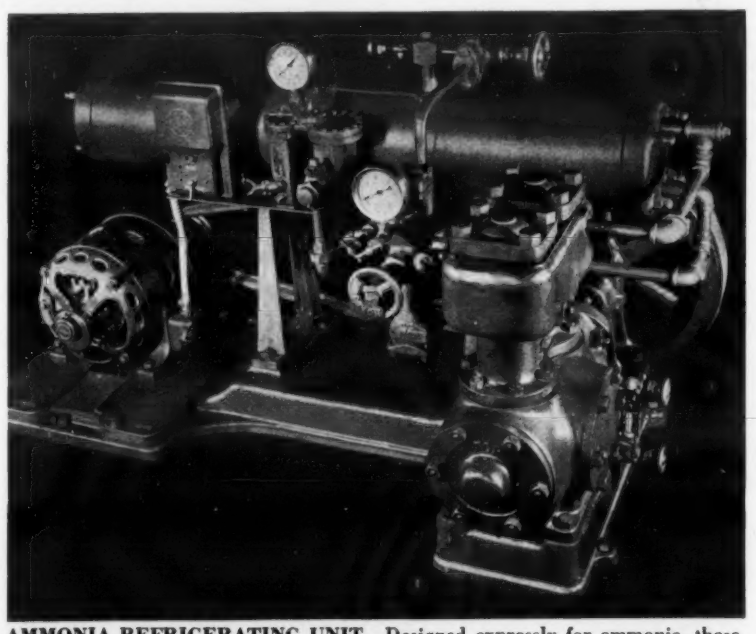
The utility still sells electric ranges and water heaters, but its sales of these appliances are 20 per cent off this year as compared with last, Mr. Mudge told me.

Goodwill...Sales...Profits ...with a York Franchise

★



FREON REFRIGERATING UNIT. Designed expressly for the use of Freon as the refrigerant, this complete line of units sets a standard far in advance of anything yet introduced in the commercial field.



AMMONIA REFRIGERATING UNIT. Designed expressly for ammonia, these units are of the heavy duty type and are available in a range of capacities to meet every commercial refrigerating need.

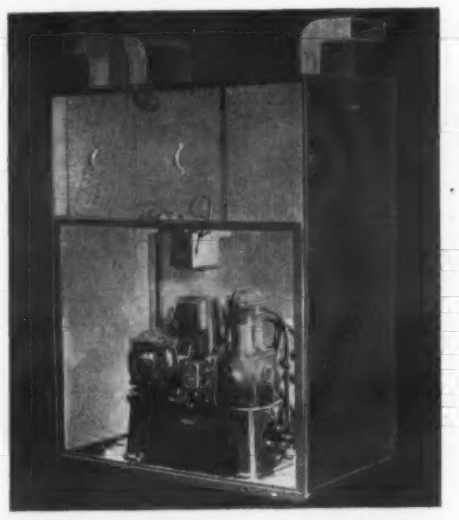
York offers a *complete* line of Commercial Refrigerating and Air Conditioning Units, engineered and built to meet today's demands . . . efficient . . . flexible . . . sturdy . . . automatic.

That's why York distributors and dealers are always able to offer the correct system for each job . . . correct as to capacity . . . correct as to type. And they can offer York equipment with absolute confidence as to its quality and dependability . . . a confidence born of the knowledge that there is something more than half a century of *manufacturing* experience behind the name York. That "something more" is this. They are selling the product of an organization which has never confined its activities to manufacturing alone but which, instead, has always installed and taken full responsibility for the overall design and proper functioning of the entire system . . . an organization dedicated to the belief that it is the completed job in operation which determines how good an investment the purchaser has made.

To keep pace with the ever increasing demands of rapidly widening fields of application in the smaller capacities, York is today expanding its sales and service organization to include a limited number of distributors and dealers who are prepared to take advantage of the profit possibilities offered by either York Refrigeration, York Air Conditioning, or both. You can build goodwill, sales and profits on the name of York . . . a name which is everywhere recognized as a symbol of efficient, trouble-free refrigeration and air conditioning.

CEILING TYPE UNIT AIR CONDITIONER. Designed to meet the varying demands of comfort air-cooling and heating in offices, stores and restaurants as well as for industrial applications.

FLOOR TYPE UNIT AIR CONDITIONER. A compact year 'round unit air conditioner for installation directly within the room to be conditioned. Provides summer cooling and dehumidifying; winter heating and humidifying.



CENTRAL SYSTEM AIR CONDITIONER. A complete year 'round air conditioner for basement installation. Air distributed to rooms by means of ducts. View shows cover panels removed.

YORK REFRIGERATION AND AIR CONDITIONING

The coupon is attached for your convenience. Use it now to secure more detailed information. There is still time to cash in on a York franchise this season. ⟶

YORK ICE MACHINERY CORPORATION, YORK, PA.

Please furnish more detailed information on your plans for wider distribution of

☐ York Commercial Refrigeration
☐ York Air Conditioning

Name.....
Firm Name.....
Street.....
City..... 5

Supreme Court Upholds Reduction In Utility Rate Base

(Concluded from Page 1, Column 3)

of the utility from the decision handed down by the southern California district court.

Result of the case will be a refund to consumers of Los Angeles Gas & Electric Corp.'s gas output of about $3,000,000, and a yearly saving in the future of approximately $1,000,000 on gas bills.

The utility claimed a rate base of $95,000,000, on the basis of items it declared had not been included or had been undervalued in the estimate, and stated its belief to be that prices for the immediate future and for several years to come would be higher than at present and would approximate 1929 levels.

Chief Justice Charles Evans Hughes, in handing down the opinion of the court, pointed out that today's values are not the same as those of 1929 and 1930, and that these previous years cannot be taken as a criterion on which to judge present or future values.

The commission valued the properties according to "historical cost" and "fair value." The first evaluation was arrived at by considering historical cost of the plant with additions and betterments (figured on the same basis as previous rate proceedings); cost of materials and supplies; amounts set aside for working capital, interest, organization expenses, and franchises; and cost of land at current prices.

To this total of $60,704,000 was added $5,796,000, making the rate base, or "fair value" of $65,500,000.

Dissenting Justice Butler declared, "This is an important case. The amount at stake is great, and the principles involved are important."

Bases of the dissent were: There was no warrant for reversal of the commission and district court in respect of unit prices upon which they built up the "fair value" figure; the court should not try to ascertain the amount of overheads which should be included; there was no warrant for eliminating standby plants from the agreed inventory, since they were included by the commission and district court; appraisal of "going value" was arbitrarily excluded; the commission's methods resulted in arbitrary undervaluations; the decree appealed from should be vacated and the case remanded; and the case should be referred by the district court to a special master.

Justice Sutherland joined in the dissent.

SOME REDUCTION PROMISED BY COMMONWEALTH

CHICAGO — That Commonwealth Edison Co. stands ready to make some concessions in rates to all classes of customers, in spite of the fact that it believes present rates to be so low as to be almost confiscatory, was pointed out by Harry Dunbagh, attorney for the company, in a statement to the Illinois Commerce Commission.

As a result of its state-wide drive for cheaper rates based upon today's lowered costs and values, Commonwealth Edison Co. is undergoing investigation by the commission.

POWER RATES REDUCED IN SOUTHERN UTAH

DENVER—New rates announced by Southern Utah Power Co. are 10 cents for the first four kwh. per room and 7 cents for all above that figure, constituting an appreciable reduction from previous rates of 12 cents per kwh. for the first 30 and 9 cents for all above.

Thirty per cent of the users will be affected by a new minimum rate of $1 net per month instituted by the company to replace the present rate of $1.25. The new schedules have been approved by the state Public Utilities Commission.

NEW YORKERS AGITATING FOR RATE CUT

NEW YORK CITY—When this city opens its fight to reduce electricity, gas, and telephone rates, it will strike first at two electric companies operating in densely populated areas here, it has been revealed by persons leading the rate-reduction drive.

Corporation Counsel Hilly, who will direct the undertaking, said recently that he hopes to win cases against the two large companies and thus set a precedent which will influence authorities in reaching decisions on rates charged by other companies.

Mr. Hilly, who has already secured complaints against all utilities in the city which supply electricity, gas, and telephone service, has prepared charts showing that New York City pays more for electricity than 12 other cities in the United States. He will prepare similar charts for gas and telephone rates.

The chart of comparative electricity rates shows monthly rates for residential areas, a seven-room house being considered the standard residence. The tabulation follows:

City	Minimum Charge	Charge For 10 kw. Per Month	Charge For 40 kw. Per Month	Charge For 100 kw. Per Month
New York	$1.00	$1.00	$2.55	$5.55
Chicago	.50	.70	2.42	4.26
Philadelphia	.75	.75	2.40	4.45
Detroit	.50	.85	1.93	3.54
Los Angeles	.60	.60	1.81	3.31
Cleveland	.75	.75	2.00	4.40
St. Louis	.50	.67	2.49	3.91
Baltimore	.75	.75	1.75	3.77
Boston	.75	.75	2.55	5.39
Pittsburgh	.50	.70	2.20	4.10
San Francisco	.40	.85	2.15	4.25
Milwaukee	.50	.62	2.34	4.05
Buffalo	.75	.75	1.75	2.78

Per Cent by Which New York City Charges Exceed Other Twelve Cities

	P. C.	P. C.	P. C.	P. C.
Chicago	100	43	5	30
Philadelphia	33	33	6	24
Detroit	100	17	32	57
Los Angeles	66	66	41	68
Cleveland	33	33	27	26
St. Louis	100	50	2	42
Baltimore	33	33	46	47
Boston	33	33	..	30
Pittsburgh	100	43	16	35
San Francisco	150	18	19	31
Milwaukee	100	61	9	37
Buffalo	33	33	45	100

ters.

LOWER ELECTRIC RATES ASKED FOR MICHIGAN

LANSING, Mich.—Acting in accordance with the United States Supreme Court holding that 1929 utility rates should be cut, Utilities Commissioner Edward T. Fitzgerald of Detroit May 9, proposed immediate reduction of rates throughout Michigan.

Lower prices paid by utilities for labor and materials, stated Chief Justice Hughes in his Supreme Court opinion, as well as decreased property values, justify reductions in the present rates. Commissioner Fitzgerald declared that the ruling practically forces the Michigan commission to take steps to cut all service charges immediately.

KENTUCKY UTILITY CONTESTS RATE REDUCTIONS

LOUISVILLE, Ky. — Asking that 1933 electric rates be declared null and void, Louisville Gas & Electric Co. here has brought suit against the city, the mayor, and director of law.

The company has demanded a restraining order and permanent injunction against an ordinance passed recently which lowered previous rates.

A temporary restraining order has been issued by Judge Cochran of the eastern Kentucky district court, who set June 9 as the date of the hearing.

RATE INVESTIGATION BEGUN IN ALABAMA

BIRMINGHAM, Ala.—As a result of continued complaints from citizens in this area, Alabama Public Service Commission has ordered investigation of rates of the Alabama Power Co. and Birmingham Electric Co.

Citation on the Alabama Power Co. will be heard June 20 in Montgomery, while the hearing on the Birmingham Electric Co. citation is to be held here May 25.

245 Refrigerators Sold During Hudson's Show

DETROIT—The annual refrigeration show held by the electrical appliance department of J. L. Hudson Co., which closed here May 13 after a 15 day's run, was the most successful in the five-year history of the event, with 245 units being sold, according to J. B. Ogden, manager of refrigeration sales.

The total number sold was 75 more units than were sold at last year's show. Practically all the refrigerators sold were 1933 models, and 6-cu. ft. models proved to be the most popular sellers, Mr. Ogden stated.

All the selling was done by the Hudson Co.'s salesmen, with the distributors whose merchandise was represented supplying hostesses and home economists who served frozen desserts and made demonstrations.

The following makes were represented in the show: Apex, Copeland, Electrolux, Frigidaire, General Electric, Gibson, Grunow, Kelvinator, Leonard, Norge, and Westinghouse.

SUNBURY, PA., SCHOOL ATTRACTS 700

SUNBURY, Pa.—The *Sunbury Daily*, local newspaper, recently held a cooking school in cooperation with the East End Hardware Co., Kelvinator dealer. On every day of the school the hall where it was held and which has a seating capacity of nearly 700, was overflowing. Both newspaper officials and N. R. Gaugler, sales manager for the hardware company, described the school as one of the most successful events of its kind ever staged here.

BRECKENRIDGE TAKES LEAD IN G. E. 'HUNT'

CLEVELAND — Commissioner Don Breckenridge, Springfield, Mass., of the metropolitan district of Refrigerania swept into national sales leadership last week in the G. E. "Manhunt" sales contest.

The Springfield, Mass., distributor went into first place by the narrowest of margins, being but .1 of one per cent ahead of E. B. Emundson of the southwestern district.

In third place in the national standings, and second in the metropolitan district, is W. L. Thompson, but 1 per cent behind the leader. E. Pulver Cook jumped into third place in the metropolitan district standings.

In the Rocky Mountain district W. E. Graham of GESCO, Butte, Mont., ousted B. K. Sweeney from the commissionership of that district.

C. L. McCrea of Washington, D. C., clung to his title in the Atlantic district but D. F. Hines pulled up to within 4 per cent of his record, with Clark Adams a close third.

Dan Willis has a 10 per cent margin over M. E. Brown in the central district. Turner Barger and W. H. Ochiltree are in a tight battle for third position in this district.

E. H. Schaefer jumped from third to first place in the midwestern district, pushing M. A. Glueck into second place, and C. F. Stuefer into third place.

Trailing Commissioner Edmundson in the southwestern district is H. A. Pendergraph, with Albert Ahrens in third place.

L. H. Bennett still holds a nice lead over his Pacific Coast district rivals. George Belsey moved into second place and H. H. "Kelly" Courtright slipped back into the third position.

NORGE SALES UP 120% IN CINCINNATI

CINCINNATI—Sales of Norge refrigerators in this territory have increased thus far this year 120 per cent above the same period last year, according to R. P. Harten, president of Harten-Knodel Distributing Co., distributor here.

TIGAR CHANGES NAME

CHELSEA, Mass.—Tigar Corp., refrigeration company here, was dissolved April 17, and the business is now being carried on by Tigar Refrigerating Co. with no other changes.

DAY AND NIGHT BEER COOLERS

DAY AND NIGHT

ANNOUNCING

A Complete Line of All Steel Sectional Beer Dispensing Equipment

CABINET DRAUGHT STATION

Model CKD20-1—Holds one half-barrel
Complete with Direct Expansion (no water bath) beer cooler and keg space cooling finned expansion coil in series.

These new modern coolers reflect 14 years of progress since the old era of beer serving ended in 1919.

"Day & Night," a pioneer manufacturer of electric water and beverage cooling "low sides," now offers the refrigeration distributor this beautiful line of beer serving dispensers.

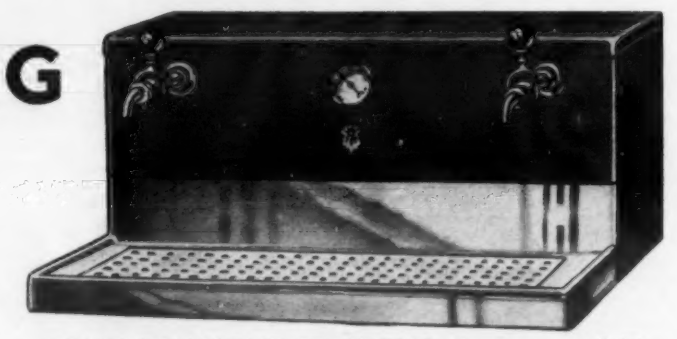
The new merchandiser of beer demands modern, compact, automatic equipment.

It must be flexible in its installation. "Day & Night" sectional units meet this demand.

Write or wire at once for specifications and prices.

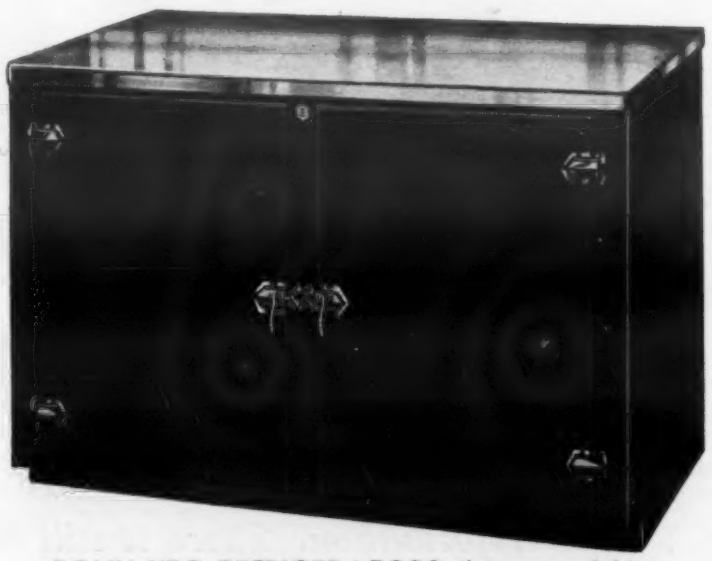
Day and Night Water Heater Co., Ltd.
Water Cooler Division
2320 E. 8th st. Los Angeles, Calif.

Warehouse stocks carried at Kansas City, Missouri, and Columbus, Ohio.



PONY DRAUGHT STATIONS (In three models)

Model CD30-2—Double Draught (illustrated)
Model CD20-1—Single Draught
Model CWD255-3—Double Draught and Cold Water Faucet
These stations are complete with Direct Expansion (no water bath) beer cooler with direct faucet connection.



PONY KEG REFRIGERATORS (In two models)

Model CK-2—Holds two half-barrels (illustrated)
Model CK-1—Holds one half-barrel
Cooled with Dry Expansion finned coil.

RUTHENBURG ISSUES GUIDE FOR BUYERS

DETROIT—Louis Ruthenburg, consultant of the refrigeration division of the National Electrical Manufacturers Association, has issued the "Refrigerator Buyer's Decalog," intended to guide prospective purchasers in their selection of an electric refrigerator.

Factors to be considered in buying are summarized by Mr. Ruthenburg as follows:

"1. First cost should be subordinated to other factors of much greater importance, as indicated in the items that follow.

"2. The reputation and stability of manufacturer and dealer.

"3. Cabinet must be of ample size to care for average needs of family for several days or a week.

"4. Amount of current consumption, which means cost of operation.

"5. Refrigerating capacity. This may be determined by the room temperature at which temperature inside the refrigerator starts to rise.

"6. Cabinet design and finish.

"7. Ice freezing—amount, freezing time, tray removal, ice cube sizes.

"8. Quietness of operation.

"9. Convenience features. These include not only convenience devices, but useful functions of a refrigerator, such as frozen desserts, chilled salads, ice cubes, cool drinks, etc.

"10. Appearance. The eye appeal of the refrigerator has much to do with the satisfaction one feels over owning a refrigerator."

NINE DEALERS EXHIBIT AT MARIETTA ELECTRIC SHOW

MARIETTA, Ohio—Lecture-demonstrations covering every phase of "comfortable living" and entertaining in the living room, dining room, and modern kitchen attracted Marietta housewives to a three-day cooperative refrigeration, lighting, and furnishings show held May 2 to 4 in the Betsey Mills club gymnasium here.

The show was arranged by the newly organized Marietta Electrical Association, under the sponsorship of the Marietta Civic Federation of Women's Clubs.

Each day a room-size stage was completely furnished, first as a living room, then a dining room, and, on the third day, a complete electric kitchen. Lectures on furniture arrangement, proper lighting, and color schemes were given by Miss Agnes Greaser, home service director of the Monongahela System.

Special frozen dessert, chilled salad, and "left-over" demonstrations were held in individual booths, from 12 noon until 10 p. m. daily by Miss Greaser's assistant, Miss Milam.

Nine refrigerator dealers occupied as many booths displaying the electric refrigerators of eleven manufacturers. Bergen Brothers exhibited the Buckeye refrigerator; Wainright Music Co., Crosley and Norge; Marietta Radio Supply Co., Kelvinator; Union Hardware Co., Majestic; K. F. Crippen Music Co., Grunow; Hall Brothers, Sparton; Marietta Furniture Co., General Electric; E. J. Decker, U. S. Hermetic; Swan Hardware Co., Apex and Westinghouse.

HARTEN-KNODEL DEALERS START STRAW HAT CLUB

CINCINNATI—With the straw hat season just around the corner, Harten-Knodel Distributing Co., Norge distributor here, has started a Straw Hat Club for the retail salesmen employed by their 82 dealers.

Each salesman who sells one Norge before Straw Hat Day becomes a member of the club. Two sales entitle a salesman to an order for a straw hat; or he may let his credits apply on a Panama, which he gets for five sales.

This contest follows directly after a baseball contest put on by the same distributor, during which 40 salesmen qualified to attend the opening game of the Cincinnati Reds.

McGREGOR'S TO DISTRIBUTE FRIGIDAIRE IN MEMPHIS

MEMPHIS, Tenn.—New Frigidaire distributor in this city is McGregor's, Inc. The organization will distribute Frigidaires in the Memphis area, and parts of Tennessee, Arkansas, Mississippi, and Kentucky, according to John M. McGregor, president.

SIX DISTRIBUTORS DISPLAY AT HARRISBURG SHOW

HARRISBURG, Pa.—Majestic, General Electric, Frigidaire, Kelvinator, Westinghouse, and Norge refrigerators were among those displayed in a refrigeration show held in this city during the week of April 24 to April 29.

Local distributors of these products cooperated in promoting the exhibit.

DRY-ZERO CORPORATION
"DRY-ZERO"
(REGISTERED U. S. PAT. OFFICE)
HIGH DUTY
INSULATION AND PRODUCTS
MERCHANDISE MART

POST OFFICE BOX 3345
MERCHANDISE MART STATION

FACTORY
CHICAGO, ILL.

CHICAGO, ILL.

May 2, 1933.

Mr. M. Glen Miller,
M. Glen Miller, Advertising,
8 So. Michigan Avenue,
Chicago, Illinois.

My dear Glen:

Refrigerator dealers and distributors are deluging us with requests for our descriptive circulars "What is Dry-Zero", claiming Dry-Zero is one of their best selling points.

We are surprised to find among these, a lot of dealers whose boxes are not Dry-Zero insulated and they are utterly amazed when we tell them so. Only yesterday, a Chicago dealer would hardly believe Cunningham, who replied to him over the telephone that neither of his two well-known makes was Dry-Zero insulated. Both manufacturers, he claims, had specifically advised him they were using Dry-Zero. He became very indignant and swore he would change his lines.

It seems clear that many dealers believe they are selling Dry-Zero insulated refrigerators - are sure of it - when, in fact, they are not.

Some manufacturers are encountering trouble and rejects and are changing insulation almost monthly. Several are contemplating giving up the cheap stuff for Dry-Zero, and some may be panic stricken enough to go into reverse - as you know happened in one instance last fall. So it wouldn't be correct to publish a list of users as of today.

Can you get up an ad that will show dealers and distributors that they should make sure they have Dry-Zero, even though they think they have? It is only fair to them, as well as to the manufacturers who really do use Dry-Zero throughout - and to ourselves.

Sincerely yours,
Harry H. Lindsay
President

HBL:aeb

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN

M. GLEN MILLER ADVERTISING

Mr. H. B. Lindsay
President,
Dry-Zero Corporation,
Merchandise Mart,
C h i c a g o

Dear Mr. Lindsay:

Your assignment is a poser. What I would like to do is publish a list of Dry-Zero users. But the constantly vacillating policy on insulation, almost epidemic this year, between quality and cheapness, would put it out of date before publication.

Further, some manufacturers are averse to naming the insulation they use, as you know. This seems poor policy, but we've got to accept it as is. I think, too, you'd find it might aid in further improper exploiting of Dry-Zero if any present users fall for cheap stuff.

After all, it is the dealer and distributor who is most immediately interested in his refrigerator's performance in his customer's kitchen. He ought to definitely know whether his boxes have quality and performance in the walls to assure long life and economy of operation. The continued success of his business depends on this.

OK
H.B.L.

Why don't you let me print your letter just as you wrote it. I don't know of a better or more honest way to point out to dealers the importance of writing to you for the facts on a matter of so much importance.

Sincerely,
M. Glen Miller

FIELD REPORTS

BY PHIL B. REDEKER

TOLEDO, OHIO

Grinnell's Toledo Business Steady

The Grinnell Bros. Music House is an old-established Detroit distributing organization which operates branch retail stores in Detroit and surrounding cities. Like many similar establishments originally created to sell pianos and musical instruments, this company turned to radio when the radio age came into being, and later went deeper into the appliance field by adding electric refrigerators to its line of merchandise.

Unlike many old established businesses, where the founders or their descendants are no longer connected with the organization, the "Grinnells" are still active in the management of the business. Manager of the Toledo operation is Herbert Grinnell. "Managing" to Mr. Grinnell does not mean sitting behind a desk giving orders, but rather in leading the sales force into action on the floor.

Business, Mr. Grinnell says, has shown a considerable increase this year as compared to last, sales reaching a two-a-day pace during the latter part of April and first part of May. Buying has been increasing steadily, rather than in a spurious fashion, and there was no great buying splurge after the banking moratorium was rescinded, he says. The reason for this, according to Mr. Grinnell and other Toledo dealers, is the fact that Toledo has climbed out of its banking muddle. Toledo's banking structure crashed in June, 1931, and the banks that recovered from that blow were apparently little affected by the moratorium.

What type of people are purchasing refrigerators, Mr. Grinnell was asked.

"I'm too busy selling them to make any note of that," was the reply. "However, last week I made three sales to individuals who looked little better than bums off the street. I wouldn't have bet that they had money enough to buy shoe laces. Yet they all dug money out of their pockets for good-sized down payments on machines in the medium-priced line.

"I've noticed that prospects who are apparently or reputedly well-off are generally 'chiselers' who want to get the refrigerator at the wholesale price and who want the longest possible time to pay for the machine."

Most of the sales have been made on a time payment basis, Mr. Grinnell states. Repossessions are few, partly due to the liberal policy which the Grinnell organization has assumed, and partly because people who have once used electric refrigeration will do everything possible to keep it in their home, Mr. Grinnell points out.

Our conversation was interrupted by the entrance of a prospect who was wearing the uniform of a U. S. mail carrier. Mr. Grinnell gave him a demonstration as we stood by. The sales manager put all his emphasis on details of construction. Price and competition didn't enter into the sales talk.

Mr. Grinnell was demonstrating a Norge, and he quickly pointed out the advantages of the copper evaporator, the porcelain front of the evaporator, "which keeps the ice trays from freezing to the evaporator," the Lazy Latch "which allows you to open the refrigerator door while both hands are full without having to balance on one foot," the rounded corners of the inner liner, and the advantages of the rubber strips across the top of the cabinet (the prospect asked for an explanation of these).

Particularly effective, it seemed to us, was Mr. Grinnell's simple explanation of the operation of mechanical refrigeration. The mailman seemed to grasp readily the idea that the heat was expelled through the condenser "which is like the radiator on your automobile."

"Bring your wife in some evening; we're open until 9 o'clock every night," was Mr. Grinnell's parting word to the mail carrier.

• • •

Leo the Lion Draws Frigidaire Prospects

When we stopped in at the Frigidaire salesroom which is operated as a part of the Lion department store, but which is not within the store proper, a fair-sized riot seemed to be in progress at the rear of the store.

The greatest part of the crowd was made up of women and children. They all seemed very intent on some activity which was going on at the very back of the salesroom.

In a wire cage on a raised stage was no less a personage of the animal world than Leo, the lion whose roar and mane-shaking is the trade-mark of Metro-Goldwyn-Mayer motion picture productions.

Leo was ferocious enough (in his actions at least) to draw screams of delight and terror from the audience, and when it was over they gave the trainer a good hand and filed out apparently satisfied with the entertainment.

The act was in Toledo to ballyhoo a recent M. G. M. talkie, and it was offered to a number of stores for a promotion hook-up. L. S. Talbert, manager of the electrical appliance department, was quick to seize upon the possibility of increasing floor traffic in his salesroom (which doesn't benefit from the normal department store traffic) by employing this "natural" sales promotion stunt.

The show is held in the rear of the shop, while the front is filled with a display of refrigerators in all sizes and styles. Patrons going in to see the show just can't miss noticing the refrigerators, and a good percentage of the women stop on their way out to look at them—as Mr. Talbert visualized when he planned the stunt.

"Our sales since the first of the year have tripled as compared with sales for the same period last year," Mr. Talbert declared. "We expect to sell 25 this week, if we maintain the pace set the first couple of days. We are proud of the fact that 80 per cent of our sales have been of models in the super-series line.

"Ninety per cent of the sales have been on a time-payment basis, most of the customers asking for the maximum amount of time in which to make their payments. I think this is good evidence of the general public's overwhelming desire to have an electric refrigerator in their home," Mr. Talbert stated.

Middle-class wage earners and shop owners constitute the main class of buyers, Mr. Talbert has noted. That people who are out to purchase refrigerators this year are generally good, substantial citizens is indicated by the small number of "voids" which the finance company returns on applications for credit, he says.

"Refrigeration is 'way ahead of our dollar volume on any other appliance and may equal the total for all other electrical appliances, and this in the face of the fact that we do not have the benefit of the normal store traffic," says appliance manager Talbert.

Mr. Talbert has another new stunt which is worth passing on to other dealers. In the show window facing on the street is a large panel of photographs of members of the Frigidaire retail sales organization, all young and well-groomed but all experienced ("we have no time for training schools," is a Talbert maxim). This is a humanized appeal which is getting a lot of attention from passersby.

• • •

Bogart Creates Esprit de Corps

It was 9:45 p. m. when we passed the retail store operated by the H. G. Bogart Co., General Electric distributor. A lone man was going over some records on a table that forms part of the all-electric kitchen, which is built against the back wall of the store.

The late-working gentleman was F. J. Jeffries, retail sales manager.

But Mr. Jeffries was not the only member of the organization putting in a 14-hour day. Shortly after we had been admitted, Alma Harshbarger, home economist, emerged from the floor below, which houses the Bogart offices.

After chatting with these two people for an hour (during which we were interrupted by two couples who insisted on being admitted to look at the new G. E. 10-star model) Mr. Jeffries directed a tour of the maze of offices which house the Bogart organization.

There we found S. E. Gerschleiter, general manager, and an assistant, hard at work, with Mrs. Gerschleiter on hand to lend her moral support to the proceedings.

That this extra effort is not in vain was demonstrated when Mr. Jeffries produced records showing that 26 sales had been made since the first of the month, the great majority of them for cash.

Of the units sold, two retailed for $115, one for $149, and the rest brought a purchase price in the range from $199 to $275.

Pleased is the retail sales manager with the fact that the 10-star models are moving nicely, one salesman selling three of these models in one week.

Mr. Jeffries believes that one of the reasons for the good showing made by the retail sales organization has been the feeling of good fellowship which Mr. Bogart has succeeded in creating in his sales force. In one of the basement rooms is another G. E. kitchen, in which the "boys" learn how to use the appliances they are selling. In this room also is a piano, and on Saturday night there is a general "get together" in which some of the salesmen cook a meal, and all gather around to play and sing in an atmosphere of good fellowship.

Mr. Jeffries says that much of the credit for the present showing is due Mrs. Harshbarger, for her missionary work among housewives which paves the way for the salesmen. Mrs. Harshbarger has also helped to close many sales through demonstrations, he declares.

Last year this home economist conducted 80 cooking schools, made 200 calls on individual prospects, besides teaching every salesman how to make frozen desserts and to cook on an electric range.

• • •

Every Sale for Cash

Heat & Power Engineering Co., which sells Williams Oil-O-Matic refrigerators, has a record for 1933 that is unique in two respects: Every sale has been for cash, and every job sold has been in the 6-cu. ft. size or larger.

"People seem to realize that prices are about at the bottom, and we have encountered very few price shoppers," declared E. M. Gresham, sales manager. "In fact, we find very few prospects who have done much shopping at all, and scarcely any who are 'just looking.' Most of them seem to have their minds made up before they enter our store."

Mr. Gresham also reported that oil burner sales (Williams Oil-O-Matic burners are handled by this dealer) have been better in the period since September, 1932, than they have been for the past three years.

• • •

Gibson Sales Total 13 In One Week

William V. Gregg of the United Music Co., Gibson dealer, was in high spirits when we dropped in on him. His organization had sold 13 units during the first week in May, and he expected to do even better the second week. His business for the first four months of the year was double that of the same period in 1932, he declared.

About one-third of the sales closed in April and the first part of May were for cash, he stated. "White collar" workers and merchants comprised the majority of the buyers, very few of the prospects being from the laboring class.

Mr. Gregg cited several instances of a situation common to many dealers this year might be called the "paradox of the shopper." It seems that the most careful buyers, those who have been "looking at" refrigerators for months, are the very ones who demand that their refrigerator be installed on the day of purchase. In several cases, Mr. Gregg declared, he was forced to make the installation on the very day he sold the job with the threat of a canceled order hanging over his head!

Mr. Gregg uses three outside salesmen and employs a young woman who takes care of the walk-in trade. This young woman, who has learned to crowd a maximum of sales points into a minimum of time, has been particularly effective in making demonstrations to feminine shoppers.

• • •

High-Priced Sales

C. J. Herkel, president of the Toledo Refrigeration Co., which handles the Servel and Potter household lines, Servel commercial, and Ed. Friedrich display cases and beer coolers, likes the way cash sales are coming in.

In the first week in May Mr. Herkel sold three household jobs for cash, the buyers being, by occupation, a member of the city's fire department, a factory foreman, and a clerical worker for a gasoline distributing firm. All of the jobs were 6 cu. ft. or better in capacity.

Mr. Herkel also recently closed a commercial sale consisting of a Friedrich 10-ft. display case, a Servel Humidraft for walk-in cooler, and a 1-hp. Servel machine. The terms were cash on the line.

• • •

McCray Increases Prices

At the McCray Refrigerator Sales Corp. (Toledo branch) F. I. Davison, manager, greeted us with what he termed the "best news we've had in years." The "good news" (at least Mr. Davison considers it to be such) is that McCray has ordered a general increase in prices on its display case and commercial cabinet models.

Mr. Davison is handling Liquid Carbonic draft beer dispensing cabinets and McCray keg beer coolers, but he reports that most of the equipment for establishments that are dispensing draft beer has been made by local "tinsmiths" or carpenter shops. Some business that he might have had he has been forced to turn down because the credit risk was so poor.

He has made one "model" installation for a restaurant, however, which consists of two Liquid Carbonic beer cooling and dispensing cabinets, a model 320 McCray reach-in box for bottled goods and delicatessen items, and a 16-keg storage refrigerator, with McCord evaporator, which is located in the basement.

Mr. Davison in many cases sells Universal Cooler refrigerating machines in combination with his display case and cooler equipment, and thus far this year has sold 16 Universal Cooler units through this "complete job" plan.

• • •

Electric Range Sales Good

Sales of refrigerators by the Toledo Edison Co. were 20 per cent greater in April and the first week of May, 1933, than they were for the same period last year, according to J. E. Fanning, manager of the refrigeration and range sales department. Electric range sales are also better this year, Mr. Fanning states.

Mr. Fanning attributes the increase in appliance sales to the apparent proclivity of the public to purchase goods which they can use or enjoy, rather than to re-invest their money in the hope of multiplying it. He also gives credit to President Roosevelt, stating that: "The President has inspired the people with confidence, and they seem to feel that their future income will be guaranteed in some form or another."

Toledo Edison's advertising on electric refrigerators this year is "straight appeal" copy as contrasted to the purely cooperative campaign which was employed last spring.

"We feel that we can best help the dealer by actively promoting sales through our own organization," Mr. Fanning states.

Charles J. Pierson of the Standard Electric Range Co., manufacturer of Standard ranges, bears out Mr. Fanning's statement that range sales are on the increase.

Despite the fact that part of his plant is on a 24-hour operating basis, the factory is almost a month behind on orders, Mr. Pierson estimates. Dealers in the East are moving ranges in large quantities, he declares.

LIMA, OHIO

'Give Us More Merchandise'

At the Frigidaire-Maytag Co., Frigidaire dealer, we found Ben Norwick, manager, with but one complaint to make—he can't get merchandise fast enough. "They cleaned out our store twice last week," he declared, "and we probably missed a dozen sales last month through failure to promise immediate delivery."

Frigidaire-Maytag sold 12 units in Lima during the first week in May. April sales were up considerably as compared with April, 1932, said Mr. Norwick. About half of the units sold were in the super-series line.

"More people are putting out cash for refrigerators than has ever been the case in previous years," the manager stated. "People who have money, whether they are employed or not, seem to be buying. They seem to be anxious to put their money in some sort of a tangible commodity or piece of merchandise, and I have found many who declare that they are buying electric refrigerators before anything else."

Mr. Norwick also handles Frigidaire commercial, and he reports some good installations of milk-cooling equipment. A one-time salesman of farm machinery, Mr. Norwick believes that if commodity prices keep rising, there will be a tremendous farm milk-cooling market opened up. City and state requirements for high-grade milk are becoming more stringent, and this fact is making the farmer cognizant of the need for better cooling equipment.

Mr. Norwick is planning to cultivate the farm commercial market in an intense manner, as he points out that farmers are "good people to deal with."

"At least they can't close up on you and jump town overnight," he points out.

• • •

Rowland Augments Kelvinator Force

Rowland's store, Kelvinator distributor, has recently found it necessary to augment its sales force with its weekly sales mounting and more prospects on file than its normal force could handle.

One of the oldest furniture stores in the town, Rowland's is finding old customers returning to buy electric refrigerators.

• • •

Copeland Commercial Business Improves

R. H. Jacobs of Jacobs Appliance Co., Copeland dealer, has the same complaint as his competitor, Ben Norwick. Mr. Jacobs declares that he has lost a number of sales because of inability to get merchandise.

Nevertheless, he closed three sales the first week in May and closed two for cash early in the second week of May. The units were sold to people with modest incomes, he declares.

Mr. Jacobs also handles Copeland commercial units, McCray commercial refrigerators, and beer-cooling equipment made by the Liquid Carbonic Corp. and Anheuser-Busch.

Commercial business has been better this year than last, and Mr. Jacobs has installed equipment for food markets in the surrounding cities of New Bremen, Blufton, and Wapokoneta as well as for a number of local stores.

He has also equipped the Lakeview Inn at Lakeview, Ohio, with a Liquid Carbonic draft beer dispensing unit hooked up to a Copeland machine.

• • •

Crossley Sells Crosleys

C. C. Crossley, who, appropriately enough, handles the Crosley line, was out when we called; but apparently he is doing a rather nice business, as all the other dealers made mention of his activity in commenting upon their competition.

SELL THEM All WITH

Bakeries
Cold Storage
Dairies
Hotels
Ice Plants
Water Cooling
Breweries
Air Conditioning

BAKER'S Dual FRANCHISE

Clubs
Delicatessens
Florists
Groceries
Meat Markets
Restaurants
Soda Fountains
Beverage Cooling

THINK of the extra sales advantage in being able to sell refrigeration to the corner grocery as well as the big packing plant, brewery, and air conditioning jobs. The new Baker Dual Franchise enables you to sell the complete line of Baker Refrigeration for any size installation.

WRITE *us about your present selling problem, and we will explain how the Dual Franchise will solve it.*

BAKER ICE MACHINE CO., INC.
1518 Evans St. Omaha, Nebr.
Factories: OMAHA FT. WORTH LOS ANGELES SEATTLE

ADVERTISING AND SALES PROMOTION

GRUNOW PUBLISHES PRESENTATION BOOK

CHICAGO—An elaborate and impressive manual for use by Grunow retail salesmen in making sales presentations to prospects has just been finished by Grunow Corp.'s advertising and sales promotion department.

The manual is interesting not only from the standpoint of the actual information it contains, but also for its *method* of presenting facts about Grunow refrigeration, and for its illustrations, typography, and makeup.

It is printed in several colors on heavy linen-finish paper, and is bound in red paper with a suede-like finish. On the front is the company's trade design bearing the word "Grunow."

As pages of the manual are turned for her, the housewife will find that the manual seeks to impress her with two things—that Grunow offers "the first real advance in electric refrigeration," and that Grunow refrigerators are imbued with a personality—that of William C. "Bill" Grunow.

Near the front of the book is a large picture of Mr. Grunow, captioned by a signed letter from him which states what he has tried to build into his refrigerator.

Pictures of Factories

Next come halftone pictures of the Grunow factory and the Briggs plant (in Detroit), inset with a photograph of a memo from Mr. Grunow's office reading: "No matter if the public were able and willing to spend a thousand dollars in order to own the best electrical refrigerator, there could be no better built than I am offering."

A short bit of copy then stresses the beauty of Grunow refrigerators, after which comes the usual health insurance argument, topped off with an eye-catching photo of a chubby tot reaching for something far above his golden head.

Next page shows with charts the difference between "ice refrigeration, inefficient electric refrigeration, and Grunow refrigeration" from the standpoint of proper temperature maintenance at low cost.

Two pages talk about food, and make three points: that electric refrigeration makes savings possible in food purchases, that it protects health by proper food preservation, and protects the housewife's investment in food.

Information on Refrigerants

Then a spread on refrigerants. A headline reads, "Yes, 'Accidents Will Happen'," and surrounding this streamer are clippings from newspapers which describe accidents resulting from leaks and explosions in units using refrigerants other than carrene.

Leading down from the "accidents" headline is a long-legged B U T which starts a page-dominating sentence, "not with Grunow . . . It's safe."

Illustrations of carrene, the Grunow unit, and the Grunow cabinet follow next, described respectively as the blood, heart, and body of the Grunow refrigerator. Another page shows large buildings in the U. S. where carrene is already in use in commercial installations.

Next couple of pages get semi-technical, and attempt to show the prospect how carrene operates at a negative pressure up to 100° F., and what the refrigeration cycle is. Dunce-capped little fire boys represent the heat waves in the refrigeration cycle illustration.

Pictures of Features

A series of photographs in full colors present various features of the Grunow cabinets, and lay much emphasis on the cabinet's appearance, flush doors, insulation (Dry-Zero), and shelving.

The manual's presentation then jumps again to talk about the Grunow compressor and carrene, and finally gives a roundup of all principal features of Grunow refrigeration on a double-page spread.

Last three pages illustrate and give key specifications of Grunow's three models.

DAILY DESCRIBES NEW DEAL IN ADVERTISING

CLEVELAND—Declaring that "there is business to be had by those who go after it," Walter Daily, sales promotion manager for General Electric's refrigeration division, spoke over station WTAM here May 13 on "The New Deal in Advertising."

"The billions now in the banks eventually will be put to work buying goods," Mr. Daily stated. "It is a real opportunity for selling and advertising. The average person would rather spend a dollar than keep it. He gets fun and a thrill out of spending."

Meeting Planned By Industrial Advertisers

CHICAGO — How advertising is meeting present-day problems will be the theme of the eleventh annual convention of the National Industrial Advertisers' Association, to be held here during Engineering Week of the Century of Progress exposition in June.

With headquarters at the Medinah Athletic club, the conference is to be in session three days, June 26 to 28, and will include an extensive exhibit of successful industrial advertising on many products. Industrial executives in all fields are invited to attend.

Presenting practical suggestions relating to present-day sales operations, Bennett Chapple, vice president of American Rolling Mills Co., is expected to speak on the subject, "What I Have Learned About Advertising During the Depression."

William L. Rickard, president of Rickard & Co., is to give his company's viewpoint on the problem of marketing industrial products. Arthur Nielsen, president of A. C. Nielsen Co., who has completed many market surveys for individual firms, plans to present an illustrated discussion of the principal features of market research.

In addition to the general addresses there will be clinical sessions at which publication advertising, direct mail, house organs, visual presentations for salesmen, and similar subjects, will be analyzed from a practical standpoint by means of specimen material.

ELECTROLUX MAILS 4-PAGE ROTOGRAVURE PIECE

NEW YORK CITY—Electrolux Refrigerator Sales, Inc., is sending to all gas companies now handling Electrolux refrigerators and other organizations which are prospective Electrolux retailers a four-page rotogravure piece picturing scenes at a recent Boston meeting where the company's 1933 line was presented to New England gas executives and salesmen.

WESTINGHOUSE DRAWS UP SERIES FOR NEWSPAPERS

MANSFIELD, Ohio—Departing somewhat from its conservative advertising policies, Westinghouse Electric & Mfg. Co. has prepared for dealer use a series of four newspaper advertisements which subordinate the "Dual-automatic" theme used for some time in the past, and do some plain-talk selling instead.

First of the series asks, "Who will take care of the orphans?" and then goes on to say that "during the past few years, many buyers of so-called 'bargain' refrigerators have found themselves saddled with 'orphans'—products deserted by manufacturers gone out of business, by dealers who have abandoned a sinking ship."

The advertisement continues with this advice: "Buy only products of first-class manufacturers. In refrigeration, buy Westinghouse, backed by a name the entire world respects."

Another of the advertisements shows a man puzzling over a problem in addition, for on a blackboard are figures showing that $98.50 plus $98.50 equals $129. The copy asks, "What's wrong with these figures?"

It then says, "Two cheap refrigerators do not equal one good one. You can buy an electric refrigerator for a lower price than that at which Westinghouse quality can be sold. But where is the economy if you must replace it within a few years, while a Westinghouse offers a lifetime of service?"

A third advertisement talks about Westinghouse prices and says it is "an extravagance to pay more—a gamble to pay less." The fourth discusses the variety of models offered in the Westinghouse refrigeration line.

All of the new advertisements give prominent display to the manufacturer's new slogan, "Every house needs Westinghouse."

News Flashes Are Sent To Norge Salesmen

DETROIT—The sales promotion department of Norge Corp. instituted May 1 a "news flash" service which daily summarizes for Norge distributors, dealers, and salesmen events of interest in the refrigeration industry and the world of business.

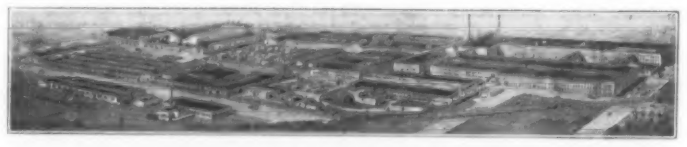
Printed in radiogram form on special bulletin letterheads, the flashes interpret items of national interest in terms of sales value, measure the trend of sales, analyze distributor bulletins, and pass on sales ideas to the selling organizations.

Increased Sales mean Nothing . . .

UNLESS there is sufficient margin to a dealer for him to make a profit on every sale. That's been the trouble in the past . . . but Servel has the answer. Servel believes that greater profits must go to the man who actually makes the sale.

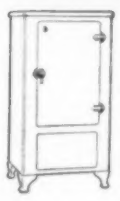
SERVEL knows that today more than ever before, every legitimate source of profit must be tapped by the retail dealer and that greater drive be put into efforts to sell.

Servel's new deal combines greater profit incentive with direct factory selling help that is effective in increasing sales. The new advertising set up—lower prices—new lines—the most complete electric refrigeration line—with greater margin to dealers and a new field of prospects—are all pointed for a successful 1933 for Servel dealers.



Servel's 30 acres of modern electric refrigeration factory where Servel-Crusader and Electrolux are made.

CRUSADER



A new line that beats all low price competition with exceptional quality. 5 different models.

The high-quality hermetically sealed line—the market's finest at reasonable prices. 9 distinct models.

SERVEL *Hermetic*

SERVEL is one of the oldest manufacturers of electric refrigerators in the industry . . . and one of the largest. Servel knows how to make good electric refrigerators, and how to help the dealer sell them. Don't put it off. Write today—to Servel Sales Inc., Evansville, Indiana.

GET THE DETAILS OF THE NEW DEAL!

ELECTRIC REFRIGERATION NEWS

The Newspaper of the Industry

Published Every Week by

BUSINESS NEWS PUBLISHING CO.

Also publishers of REFRIGERATED FOOD NEWS (monthly) and REFRIGERATION DIRECTORY and MARKET DATA BOOK (annual)
550 Maccabees Building, Woodward Ave. and Putnam St.
Detroit, Michigan. Telephones: Columbia 4242-4243-4244-4245

Subscription Rates:
U. S. and Possessions and countries in Pan-American Postal Union: $3.00 per year; 2 years for $5.00
Canada: $6.00 per year (U. S. Money)
All Other Countries: $5.00 per year
Advertising Rates on Request

F. M. COCKRELL, *Publisher*
GEORGE F. TAUBENECK, *Editor*
JOHN T. SCHAEFER, *Engineering Editor*
PHIL B. REDEKER, *Assistant Editor*
ELSTON D. HERRON, *Staff Writer*

HOWARD W. MATEER, *Advertising Manager*
GEORGE N. CONGDON, *Business Manager*
JOHN R. ADAMS, *Production Manager*

Member, Audit Bureau of Circulations
Member, Associated Business Papers
Copyright, 1933, by Business News Publishing Co.

VOL. 9, NO. 3, SERIAL NO. 217, MAY 17, 1933

Rising Prices

WHAT will the Roosevelt program of inflation mean to the electric refrigeration industry? Of course one guess seems as good as another. Nevertheless most guesses are in the general direction of higher prices.

That manufacturers are expecting—or at least preparing for—higher materials costs and rising wages is indicated by the fact that a number of leaders in the industry are now refusing to guarantee prices on their refrigerators.

Moving to protect itself against an expected price rise, Norge Corp. has notified its distributors that it will accept future orders only on condition that the refrigerators will be paid for on the price schedule which is current at the time the units are shipped (reported on page 1 of the May 10 ELECTRIC REFRIGERATION NEWS).

Kelvinator Starts It

Forerunner in this movement was Kelvinator Corp., which, late in March, placed low prices (base price $97) on its household refrigerator models for a 40-day period only, as stated on the front page of ELECTRIC REFRIGERATION NEWS for March 22. President George Mason expressed his opinion at the time that before the 40-day period had elapsed an appreciable rise in the cost of raw materials would be pushing refrigeration prices upward.

Williams Oil-O-Matic Heating Corp. followed suit (see April 12 issue) by guaranteeing its new low prices, beginning at $99.50, only until May 8.

The last days of April brought a similar statement to distributors from R. I. Petrie, general sales manager of Leonard Refrigerator Co. As reported in the May 3 issue, the Leonard factory will fill future orders with the understanding that prices in effect at the time of delivery will be charged.

Mr. Petrie observes that advance notice of the government's inflationary program has started an upward swing in commodity prices.

Distributors Trying to Load Up

Distributors, too, are anticipating price boosts. From several manufacturers' sales managers have come reports that their biggest distributors are trying to load up on household units, and are placing orders for advance shipments at current prices. As indicated above, a number of manufacturers are refusing to accept such orders.

Possibility of embarrassment to distributors arises from the shortage of refrigerators now current. Distributors can sell refrigerators, but can't get 'em. Many of the industry's factories are farther behind in filling orders than they have ever been before in their history.

And since some manufacturers are stipulating that distributors must pay the price current at the time of shipment, distributors are risking the possibility of selling a refrigerator to a customer on one price basis, and paying the manufacturer for that unit on another (and higher) schedule.

Three factors have helped cause this shortage: (1) difficulty of getting raw materials from suppliers which have practically shut down; (2) the bank holiday and cold spring which combined to make the refrigeration selling season start late and with a bang; (3) desire of manufacturers to avoid the overproduction registered in 1932, when the end of the season found warehouse and dealer stocks not only larger than usual, but large enough to hinder seriously the speedy and successful launching of 1933 lines. Thus far this year manufacturers have been proceeding cautiously, operating only to fill orders on hand.

Causes of Possible Advance

Thus two influences may combine to force prices of refrigerators upward: rising costs of parts and materials, induced by inflationary measures; and a shortage of finished refrigeration products, brought on by the industry's slow start and a possible continuing failure to keep pace with a swelling volume of orders.

True enough, not a single price advance has been recorded this year. Rather, the tendency has been downward. And within the last fortnight General Electric, Majestic, Servel, and Crosley have all sliced a few dollars off the prices of their smaller models.

People Buy on Rising Market

Notwithstanding these developments, there seems to be plenty of evidence to support the belief now current in many sectors of the industry that prices may rise.

And that, of course, should be welcome. People buy on a rising market. And higher prices mean larger commissions, greater profits per sale, and more margin for promotion. All of which, in turn, should work for bigger volume and a healthy industry.

WHAT OTHERS SAY

WHEN UTILITIES QUIT MERCHANDISING

WHEN a power company discontinues the merchandising of domestic appliances, without preparing an adequate system of distribution to carry on, it makes a serious mistake. It sets back the development of domestic load in that community for a period of years.

It is a very simple thing for a top executive sitting upstairs in the big office, or the banker behind the top executive, in a distant city, to decide that the policy will be changed. Orders can be given. Selling can be stopped. But when the power company steps hastily out of the marketplace, that does not mean that somebody else picks up the work.

Theoretically, the dealers take on the retailing of this merchandise. But actually they don't. They lack salesmen. They lack plans. They lack financial resources. They lack experience. And it requires a year or so to develop a system of dealer cooperation adequate to provide the selling and the service needed, if the growth of load is to continue.

Successful selling of electrical appliances to the home is a highly organized operation today. It embraces the training and supervision of outside salesmen, the preparation and use of advertising and display, the management of home demonstration and service, the coordination of campaigns, the planning of wiring and appliance installations, the development of trade policy and, above all, the financing of instalment contracts. All this is not created automatically out of thin air, when a utility company announces that it has decided to withdraw from merchandising. For these functions that the utility has been exercising have naturally not been duplicated by any one else. It takes time to set up something new, and the power companies owe it to the public, to the manufacturers, to the dealers and to themselves to see that time is taken.—*Electrical World*, May 6, 1933.

NEW INDUSTRIES

IN a business world seemingly honey-combed with trade associations, it is amazing to note how slowly some new industries realize the value of getting their manufacturers, their distributors, and their dealers to come together in associations for cooperative advancement. It is not many years ago that the writer attended a poorly supported convention of the radio manufacturers' association in Atlantic City, at a time when cooperative action was urgently needed. The writer recalls, too, the bewilderment with which he heard that although a manufacturers' association had been formed in another new industry, one of the two largest producers was a member of the association "on probation" and the other leading manufacturer had not been invited to join at all!

One of the more obvious advantages of trade association formation is the gathering of industry statistics. Many an industry—washing machines, radio, electric clocks, and food mixers—to mention but a few, is handicapped by its lack of reliable statistics on its early development. Cooperative sales promotion, the elimination of trade abuses and the defining of industry standards are but indications of the advantages a new industry loses without a trade association among manufacturers, dealers, and distributors.

New industries because of the very fact that they are new, are bound to make mistakes, mistakes that no one, however smart, can foresee or prevent. But surely there will be enough of these inevitable mistakes to justify the consumer, who pays the bill for all business mistakes, in his plea that the leaders of the new industries that America is bound to conceive will at least study the history of older, existing industries and avoid some of these more obvious errors.—Arthur Hirose in *Advertising & Selling*, May 11, 1933.

EXECUTIVE OPINION

Nema Active

General Electric Co.
120 Broadway, New York City
May 8, 1933.

Editor:

With regard to your May 3 editorial, the NEMA group is doing what it can to encourage other refrigerator manufacturers to join the association.

The Edison Electrical Institute is now wholly a public utility organization and there are no manufacturing members in it. I question whether there would be any advantage to either the radio or refrigerator groups in a combined meeting.

T. K. QUINN,
Vice president.

Heartily in Favor

Rex Mfg. Co.
Connersville, Ind.
May 8, 1933.

Editor:

I am writing you in regard to the subject "An All-Industry Conference," which subject was treated in your issue of May 3 of ELECTRIC REFRIGERATION NEWS.

Our reaction to this matter is this, we believe an organization should be affected including the manufacturers of electric refrigeration and certain suppliers of parts. The industry is certainly large enough to justify such an organization.

We are heartily in favor of an organization that will be comprehensive enough to include those who are entitled membership.

C. C. HULL,
President.

Opportune

Tricold Refrigerator Corp.
220 Delaware Ave., Buffalo
May 9, 1933.

Editor:

Your editorial in May 3 issue seems to be particularly opportune in view of the present attitude at Washington. It is very evident that President Roosevelt has determined to bring about a closer cooperation between different members of each industry and use the full power of the government toward the elimination of cut-throat tactics, of which unfortunately the refrigeration industry has been a good example.

While our own firm, due to its unique position and the possession of a very unusual product, has not been caught in the maelstrom of unfair price competition, many other concerns in the refrigeration industry have not been so fortunate.

A conference such as you suggest might be a good preliminary toward the organization of the industry in keeping with the new governmental policies about to be put into practice. The success or failure of such a conference will depend entirely upon the spirit with which it is entered into. If such a conference is called and those attending do so with a proper recognition of the right of others, much good can result. On the other hand, if either arrogance or the feeling of divine right, which sometimes accompanies mere size, is brought into such a conference, we will either find complete failure or the splitting of the industry into two or three separate groups antagonistic one to the other. Such a result would indeed be unfortunate.

I shall await with great interest the outcome of your suggestion and in the event such a conference is called, I shall observe with even keener interest the spirit of those attending.

T. IRVING POTTER,
President.

Profitless Progress

Dry-Zero Corp.
Merchandise Mart, Chicago
May 11, 1933.

Editor:

I have read your editorial, "An All-Industry Conference." Let me first say, in complimenting you on the spirit back of your suggestion, that I believe ELECTRIC REFRIGERATION NEWS is coming to be one of the strong potentialities for helping the industry *as a whole* out of a condition of noisy but profitless progress.

This belief is not based on the suggestion made in that editorial, but rather on your coordination of effort to bring the electric refrigeration industry back to sound ideals and principles.

In any industry, an association of executives representing 80 per cent of the business of that industry, *should* be an exceptionally strong association, with unusual power for the good of that industry.

As you state, such an association existed in the electric refrigeration industry in 1931 and early 1932.

By 1931 electric refrigeration had developed to sufficient volume and profitability to attract the "in-and-outers." These astute persons saw that inasmuch as the industry required no particular standards of quality and performance, their opportunity was wide open to assemble cheap or even distress merchandise, give it an attractive exterior and undersell, clearing a nice profit. All that was needed was to make claims of superlative excellence similar to those prevalent in the industry.

This development took place.

Immediately there were two courses open to the association comprising 80 per cent of the industry's business:

(1) To establish true standard tests that would genuinely uncover the quality, performance, and permanence of the product.

(2) To "let the situation develop"—in other words to fail to function for the protection of the industry and the public.

The first course properly conducted would have assured justified profits on honest merchandise by exposing the unwarranted or exaggerated claims of poor products.

The second course merely led to a price-cutting melee, not only injuring the industry in legitimate profit, but—as a direct result of price-cutting—cheap substitution in essential qualities.

Unfortunately, the second course was followed by a majority of the industry. Let it be said, however, that there were and are a number of notable exceptions.

The foregoing is not offered as a criticism; it is a resume of recent history to show the reason for the following question on your suggestion:

If *competent* tests show a wide difference in the performance, and a still wider difference in the permanence of performance, of well recognized makes (as is the case);

If in many cases little effort is yet being made to correct such a condition where correction is proved to be badly needed;

If, meanwhile, superlatives, exaggeration and price cuts are used to take the place of correction and improvement of vital essentials—

Is it reasonable to suppose that such a conference as you suggest would do any good for the industry while such conditions obtain in a large part of it? As improvement comes of correcting faults and faults are discovered by criticism, might not such a conference be used as a bulwark against criticism?

There is a strengthening tendency among several manufacturers to give as much care and thought to the hidden essential vitals of their product as they give to the exterior and sense appeals.

They or their distributing divisions are finding means to give force and effect to this fact in their selling. The public is beginning to appreciate it.

I think as the honesty and *profitability* of this course becomes more and more evident, the industry as a whole will retrace its steps to sound ideals and business principles.

Then an All-Industry Conference actively operating on such ideals and principles can provide an effective weapon against those whose only thought is "How cheap can we make it?"

If, eventually, some manufacturers want to make and sell cheap and rather temporary electric refrigerators to reach the fringe of the market—that is their affair, *if the public is given a chance to distinguish* between good and poor products.

Meantime, as I have indicated, I believe ELECTRIC REFRIGERATION NEWS is doing and can do much to bring about the sane, necessary and profitable progress these comments suggest.

HARVEY B. LINDSAY,
President.

In Line with Roosevelt

Uniflow Mfg. Co.
Erie, Pa.
May 10, 1933.

Editor:

I have read your editorial of May 3 entitled "An All-Industry Conference."

Properly handled I can see good that might come from such a conference and would certainly be in line with President Roosevelt's plans.

C. A. KUEBLER,
President.

Machinery Set Up

General Electric Co.
Electric Refrigeration Dept.
May 12, 1933.

Editor:

Your editorials on industry conferences at this time are very timely, and I am sure will encourage the refrigerator manufacturers to take a real interest in President Roosevelt's latest program of constructive planning in industry.

With the announcement of President Roosevelt's program, I am sure that the refrigerator manufacturers will be among the first to bring themselves together in conference. I believe the refrigerator manufacturers are just as willing to meet and discuss constructive measures for their industry as are any other groups.

We have the machinery already organized in the National Electrical Manufacturers Association, therefore, this group should be one of the fastest working units as a part of the "New Deal."

P. B. ZIMMERMAN,
Manager, refrigeration department.

(*Continued on Page 15, Column 1*)

ON THE EDITORIAL, 'AN ALL-INDUSTRY CONFERENCE'

(*Continued from Page 12, Column 5*)

Indispensable to Future Welfare

Merchant & Evans Co.
2035 Washington Ave., Philadelphia
May 9, 1933.

Editor:

I have read your editorial entitled "An All-Industry Conference" published in your issue of May 3, 1933. I believe that the formation of a trade association for the governance of the industry is indispensable to its future welfare. The inclusion of the industry within the N.E.M.A. and its subordinance thereby to the N.E.L.A. was, is and as long as continued, will be a mistake.

I take it that a discussion on certain premises and conclusions on the history, present condition and future of the refrigeration industry is in order, and that the formation of a trade association in the industry must be founded upon a consideration of the thoughts adduced from such a discussion, as well as plans which such association would foster and forward. I venture, therefore, to advance a statement of facts and to project a possible program as follows:

1. The Unprofitable electric refrigeration industry:

The history of this industry records a high rate of business mortality and a review of published financial results of corporations engaged in it shows that the industry as conducted has been highly unprofitable. Here is a public convenience and almost a necessity of a modern household, which has found wide acceptance and approval, in the manufacture of which millions have been invested, but which on the whole has been so conducted that it has yielded little fruit for those who have nurtured and tended it to gather. On the other hand, as an art the industry has moved forword with extreme rapidity and efficiency.

In manufacturing development electric refrigeration has advanced to a high degree of accomplishment. In merchandising the product and distribution to consumers it has proven a fruitless and unprofitable venture and largely a commercial failure. The time has come in the development of the industry to turn this unprofitable business into one that will pay reasonably on the capital and human effort that has been invested in it.

2. Present ills of the industry include:

(a) Over-production

(b) Below-cost selling

(c) Over-advertising

(d) Excessive expansion of selling organizations and expense.

(e) Unbusinesslike methods in distribution, including assignment of goods by manufacturers to distributor, by distributor to dealer, and by dealer on trial basis to consumers; excessive guarantees on service and machinery; dumping by manufacturer on distributor, and by distributor on dealer; rentals on meter service; and finally, the crowning folly of insecure selling on time, with excessive extensions of credit, on no security except reclaiming of apparatus in case of default. This last item includes unfair and unwise practices by sales agencies in pumping out refrigerators at too high pressure.

3. Remedies and the future:

By formation of a trade association and by cooperation of the federal government and by the actions suggested, the industry might be brought to a higher degree of efficiency and put on a more permanent and profitable basis:

(a) Trade agreements (*all under governmental sanction*) by the nationally advertised and marketed makes, to restrict production 25 per cent from 1932 production, and on the part of those manufacturers who have carried over excess 1932 production, to be further limited by deduction of this 1932 carry-over;

(b) Association agreement establishing minimum wage scale, maximum hours per week for shop labor, defining standards so as to eliminate poor and unworkmanlike machinery, and establishing overheads on factory direct productive labor, and gentlemen's agreement (with governmental assent) to make a reasonable profit—all with the intention of establishing a proper market price to the distributor, so that the distributor and dealer may have freedom of competition within the limits established in selling to the public;

(c) Trade association agreement limiting service and mechanical guarantees within the limits proved wise through many years in the automobile industry—i.e., for three months;

(d) Association agreement outlawing assignments, rentals on meter, placing of goods on trial and approval;

(e) Prohibition of financing except on a fixed down payment, and for a 12- to 15-month term in advance for payment, and at a fixed finance charge.

Trusting that through the leadership and medium of your publication steps may be taken to bring about a conference with representation and free voice to the small as well as to the large factors in the business.

THOMAS EVANS,
President.

Wild Marketing

Merchant & Evans Co.
2035 Washington Ave., Philadelphia
May 10, 1933.

Editor:

I wrote you yesterday to comment on your suggestion of "An All-Industry Conference," and I had the temerity to outline in briefest form and categorically my view of the past failures, the present ills and chance for making a better future for the refrigeration industry.

If the people in the business would banish "ballyhoo" and speak truthfully, I am sure that my statements would be recognized and admitted as substantially true to the facts.

I do not know what over-production there is in the industry, but I have a pretty good idea that there has been excess production that had to be dumped on the market at "cut-throat," profitless prices or else jammed down the consumer's throat by breaking down sound sales rules.

The result has been that the big producers of electric refrigeration have indulged in these wild marketing antics and have not relied upon selling the public at legitimate prices on the merit of their devices.

The new promotion companies entering the field forced the big companies to forsake sound merchandising methods; or rather, the big companies insisted on more volume and still more volume, and were stampeded into practically debauching the market. There is nothing in playing the game that way.

At the same time, I have no advocacy for or faith in a solution which would tend toward giving the big producers a throttle-hold on the market, or to confer upon them a tyrannical power over the small producers; nor do I advocate, and I would strenuously oppose, closing the industry against new-comers.

With these two thoughts in mind and with proper safeguards to those ends, I most strenuously favor the formation of an association to regulate the industry, and I favor regulations with teeth, and with strong authority.

I do not believe that representatives from various producers, distributors, etc., should come pell-mell into Chicago without plans or formulas. Such a gathering would get nowhere in forming an association with necessary speed. But do you not think it would be a proper and useful method to invite each substantial producer to send one representative to a meeting in Detroit in about two weeks, to formulate a call for a conference, and to draw up a tentative association structure to submit at such conference?

The logical person to call such a meeting would be yourself, under the auspices of your paper, and in calling such meeting and requesting the producers to send a representative, I would forward the thought that there should be an outline of the measures to be put forward and discussed, so that such representatives could come armed with authority, due to previous discussions in their own organizations.

This whole movement suggested in the industry is in the spirit of the time. We are more or less without any beacon lights to guide us in a reorganization of economic life. We need a discoverer, and the President has come pretty near filling the bill for the nation. A lot of his activity is exploring, no doubt, but it is essential. Why cannot you and your staff there lead the way in exploring in our particular field?

THOMAS EVANS,
President.

Would Cooperate

Sanitary Refrigerator Co.
Fond du Lac, Wis.
May 6, 1933.

Editor:

We read your editorial entitled "An All-Industry Conference" and compliment you upon your suggestions. We should be pleased to cooperate along such lines.

WILLIAM MAUTHE,
President.

Ball & Chain

"Salesmen fight over ELECTRIC REFRIGERATION NEWS. Send along a binder with a ball and chain on it."—H. L. Stearns, manager, Servel Sales, Inc., Cleveland.

Call it whatever you like...

it's a SPADE

Most people prefer plain, unvarnished, simple words . . . advertisers in particular, prefer them.

When you offer an article of real merit . . . a commodity that is needed to do a certain job, and that *does it well* . . . we believe in saying so, in words that cannot be misunderstood.

That is why you will never see any statement of the New York Evening Journal which contains those tricky, qualifying phrases which are uniformly a mere screen for incompetence . . . a subterfuge to hide disagreeable facts.

To make ourselves doubly clear, let us put it this way . . .

The Journal has the largest circulation of any *Evening* paper in New York . . . there are four Sunday papers and one Morning paper with larger circulations . . . but we are talking about our own province of EVENING papers.

In *all five boroughs* the Journal is dominant . . . in *all suburban counties* it leads . . . in *any part* of the Metropolitan New York market it has more circulation than *any other evening paper.*

Let there be no mistake . . . the *Journal* is the greatest force of daily life in considerably more than 600,000

AND NOTHING CAN BEAT IT FOR DIGGING

homes . . . for thirty-six years, through fair weather and foul, it has commanded the respect and attention of *more people,* by many thousands and thousands, than any other evening newspaper.

Such being the case, it is unnecessary for us to befog the issue; no need for such misleading phrases as "more than any other *quality appeal* evening paper" or, as in one masterpiece of verbal gymnastics, "any other newspaper whose figures have *officially* been issued."

Nor does the Journal take refuge in independent "surveys" conducted in isolated districts or at one or two strategic points by its own, obviously biased, employees. The Journal is content to rest its case upon the universally accepted, completely unbiased, thoroughly *reputable* statistics of the Audit Bureau of Circulations, whose unimpeachable evidence places the Journal FIRST.

Let us recognize subterfuge for the weak-kneed compromise that it is. Let us insist upon calling a spade a "Spade" . . .

Let us admit to ourselves that, in any group of thousands upon thousands of New Yorkers, there can be no universal trend of tastes or inclinations; they cannot *all* be rich or *all* be poor; they cannot *all* have similar likes or dislikes; in fact, they can be nothing more than what they *truly* are . . . a *cross-section* of that wonderfully polyglot, ever-differing, ever-changing New York.

That is why no New York paper, large or small, can truly represent any *one* class . . . why each represents *many* classes . . .

And that is why the *Journal,* being largest of all evening papers, in point of readership, lays open the *widest* cross-section of New York to all those with merchandise for sale.

NEW YORK JOURNAL

New York's BEST READ Evening Newspaper

NATIONALLY REPRESENTED BY THE RODNEY E. BOONE ORGANIZATION

MINNESOTA DEALER MEETINGS DRAW 160

MINNEAPOLIS—Kelley-How-Thomson Co., Majestic distributor for Minnesota and North Dakota, held two dealer meetings May 2 and 3 in Minneapolis and Duluth, where the company maintains offices, according to Charles R. Klopp, field sales manager of Grigsby-Grunow Co.

More than 90 dealers from the lower Minnesota area attended a Minneapolis showing of the new Majestic refrigeration line at the Nicollet hotel May 2 as guests of the distributorship.

Address of welcome was given by Arthur Newman, manager of the Kelley-How-Thomson radio and refrigeration specialty department. Mr. Newman then turned the meeting over to D. B. Gaines, Northwest district manager, who explained sales features of the new line.

Mr. Klopp next outlined merchandising plans for the spring and summer seasons. Jacques Tyrol, Pacific Coast district manager for Grigsby-Grunow, followed with advice to salesmen.

Dinner at the Hotel Nicollet concluded the meeting.

In Duluth the following day, Kelley-How-Thomson Co. held a second get-together, approximately 70 dealers being present. A cooking demonstration using the electric range merchandised by the distributor was an added attraction.

Speakers were Mr. Tyrol and Mr. Klopp, who pointed out special selling methods and ways to overcome competition.

THOMAS COMMENDS HAY FEVER RESEARCH

NEW YORK CITY—Lowell Thomas, radio news broadcaster, speaking on the Sunoco program May 10, commended the Johns-Hopkins-Frigidaire research resulting in relief for pollen hay fever and asthma victims through the use of air-conditioning equipment.

Stating that "here's real good news for the hundreds of thousands of victims of hay fever and asthma," Mr. Thomas discussed the research in detail and gave credit for the findings to Dr. Leslie N. Gay, Johns Hopkins authority on allergy, and Frigidaire Corp.

He advised listeners who suffered from the diseases to read the Gay article on the experiment in the May 6 issue of the *Journal of the American Medical Association*.

50 MEN QUALIFY FOR NORGE VIKING CLUB

DETROIT — Fifty salesmen have qualified for membership thus far in the newly organized Norge Viking club, according to J. A. Sterling, advertising and sales promotion manager of Norge Corp.

While membership in the club is purely honorary, there are several worthwhile prizes or membership awards that can be earned by salesmen. On attaining membership, each man is given a gold club pin and membership certificate, and as he progresses from grade to grade, he receives an appropriately engraved Gruen pentagon watch or a diamond ring bearing the club insignia.

Special awards and privileges in contests and the distinction of being classed as an "honor" salesman are other advantages of membership.

Thirty-five salesmen whose membership applications have been filed are listed below:

W. S. Alter, Roy Thompson, P. R. Chapman, C. E. Miller, H. L. Kirchner, John Cornyn, and W. A. Peters, all of Brown Electric Co., Oklahoma City.

E. L. Young, J. A. Stewart, S. K. Gerhardt, E. A. Sander, E. Saville, and J. H. Hoelting, salesmen for Norge Co. of Missouri, St. Louis.

E. F. Keller, Sampson Electric Co., Chicago; I. W. Jordan and Louis E. Mullen of Stauffer-Eshleman Co., New Orleans.

C. I. Hyatt, W. O. Carpenter, C. N. McEachem, William M. Gunter, Buz Canon, H. D. Harrison, and R. J. Gartman, all of Texas Radio Sales Co., Dallas, Tex.

Henry M. Ambad and D. Greyknowles of Columbia Wholesalers, Inc., Baltimore; F. W. Oxley, T. E. Johnson, W. Fetter West, C. C. Thompson, Jr., and Mr. Canada, all of Benjamin T. Crump Co., Richmond, Va.

A. H. Bunselmeier, Cheviot, Ohio; Charles R. Mehle, E. E. Crosson, Charles T. Porter, and Val Hirn, all of Cincinnati.

MAJESTIC AND CROSLEY TO EXHIBIT IN NEW YORK

NEW YORK CITY—Grigsby-Grunow Co. of Chicago, and Crosley Radio Corp., Cincinnati, have reserved exhibit space in the National Electrical exposition scheduled for September of this year at Madison Square Garden.

The exposition is being sponsored by the Electrical League of New York.

PACIFIC DISTRIBUTOR SHOWS SHELVADOR

LOS ANGELES—Beer added zest to two meetings of Crosley dealers and salesmen gathered to inspect the new Shelvador at the offices of Kieruliff & Ravenscroft, Pacific Coast distributor here and in San Francisco, April 21 and 22.

In San Francisco, the Crosley Shelvador display on the first floor of the distributorship shared popularity with a refreshment and lunch stand upstairs, where 3.2 beer was served.

Members of the Kieruliff & Ravenscroft company in attendance were Henry Wolf, Robert Levy, Robert Prentice, and Henry Flood. The second day this force was augmented by C. R. Kieruliff from the Los Angeles branch and William Bialkowsky, Crosley representative.

The Los Angeles showroom was given over to the display of refrigerators, while the warehouse was decorated to resemble a beer garden. At this meeting were A. E. Ravenscroft, C. R. Kieruliff (first day only), T. J. Tobin, William Hocking, Robert Rose, Robert Deville, and Dick Westenberg of the distributorship; and Mr. Bialkowsky.

WAREHOUSE STOCKS ARE DUMPED IN NEW YORK CITY

NEW YORK CITY—Dumped warehouse stocks of electric refrigerators were to be offered at public sale here May 15 and 16 at reduced prices, according to a classified advertisement in the *New York Times*, Sunday, May 14, which is quoted below:

"Electric refrigerators — Over 700 General Electric, Westinghouse, Frigidaire, Electrolux, Kelvinator, Copeland, Norge, Bohn, Majestic, Leonard, Grunow, Buckeye, Servel, Crosley, etc., in storage on the fourth and eighth floors of Dougherty's Warehouse, 437 11th Ave. (between 36th and 37 Sts.), will be sold by order of owner Monday, May 15, and Tuesday, May 16, only; in case of rain, sale will be extended through until Wednesday, May 17.

"Most of these machines (625 of them) are brand new 1932 and 1933 models and are in the original factory crates. About 75 of them are finance company repossessions and will be sold for $39.50, $49.50, $59.50, and up; all sizes from 3 to 18 cu. ft.; from 1 to 4 doors; either right or left hand doors; porcelain or duco; some motors on top, others on the bottom; all sizes of legs; some belt drive, other direct drive; some hermetically sealed; many with electric lights; some rotary type compressors and others reciprocating; guaranteed and serviced up to 4 years, according to make.

"Tremendous discounts for spot cash, or terms as low as $5 down and $5 a month on many of them to responsible parties; cash deposits must accompany all accepted bids; no refunds, exchanges, or cancellations; all sales final. Warehouse opens at 9 a. m. sharp and closes at 5:30 p. m. For further information phone superintendent of Warehouse at MEdallion 3-4575.

"Special Notice—Do not fail to attend this sale because you think our location is hard to get to. You will save many, many times the cost of the inconvenience of getting over here. Remember we are only six blocks from Macy's. This sale will be the opportunity of a lifetime. Remember that we have no salesmen to pay commission to, no costly branch stores to maintain. Hurry and get there early before the best bargains are gone."

Gould, Distributor for G. E., Dies May 6

ALBANY, N. Y.—Charles Gould, cofounder with E. M. Farmer of Gould-Farmer Co., General Electric distributorship in Syracuse, N. Y., died suddenly Saturday morning, May 6. Funeral services were held at All Saints' Cathedral in this city.

Mr. Gould originally became connected with the General Electric sales organization as wholesale manager for the Boston distributor. Later he helped organize the Gould-Farmer company as distributor in Portland, Me. Shortly before his death, the company took over General Electric refrigerator distribution in Syracuse, Rochester, and Binghamton, N. Y.

A graduate of Yale, Mr. Gould captained the university's football team in 1902. Before joining General Electric, he was connected with Chrysler Motor Car Co.

65 MAYFLOWERS PLACED IN LYNN APARTMENTS

LYNN, Mass.—A carload of 65 Mayflower refrigerators was installed here recently by the North Shore Electrical Equipment Co., local distributor, in the Elm Hill Realty Co.'s apartments, according to Lionel MacDuff, sales manager, and Harry W. Sundberg, general manager of the distributorship.

Take your choice of these three bargains

Every refrigeration dealer and salesman wants to read ELECTRIC REFRIGERATION NEWS

Here's how to get it every week until the end of 1933 for ONLY $2.00

Bargain Offer No. 2

For $2.00 we will send you ELECTRIC REFRIGERATION NEWS from May 10, 1933 to Dec. 31, 1933 (33 issues), also the 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK, revised to Oct. 1932, 590 pages, paper cover. It contains all important facts and figures about the refrigeration business, with name and address of all manufacturers of refrigeration equipment, parts, materials, tools and supplies, listed alphabetically, geographically, by trade names and classified according to products. Check Offer No. 2 on the coupon.

Bargain Offer No. 1

For $2.00 we will send you ELECTRIC REFRIGERATION NEWS every week from now until the end of the year together with the back issues since Mar. 22, 1933 (41 issues). This includes the SPECIFICATION ISSUE, so much in demand, which gives the detailed data on 273 models of household electric refrigerators made by 35 different companies. You get a total of 41 issues and the cost is less than 5 cents per copy. Check Offer No. 1 on the coupon below and mail with your check, post office order, cash or stamps.

Bargain Offer No. 3

For $2.00 we will send you ELECTRIC REFRIGERATION NEWS from May 10, 1933 to Dec. 31, 1933 (33 issues) also REFRIGERATED FOOD NEWS (8 issues) which is of special value to everyone interested in commercial refrigeration. "Food News" covers the preservation and marketing of perishable foods in all stages from producer to consumer, reporting progress in the application of refrigeration to food sales and service. The May issue gives specifications of all draft and bottle BEER coolers. Check Offer No. 3 on the coupon.

BUSINESS NEWS PUBLISHING CO.
Detroit, Mich. _____ 1933

Enclosed find $2.00. Enter my subscription according to:

☐ Offer No. 1. Electric Refrigeration News from Mar. 22 to Dec. 31, 1933 (41 issues) including the Specifications Issue.

☐ Offer No. 2. Electric Refrigeration News from May 10 to Dec. 31, 1933 (33 issues) and a copy of the 1932 Refrigeration Directory and Market Data Book.

☐ Offer No. 3. Electric Refrigeration News from May 10 to Dec. 31, 1933 (33 issues) and Refrigerated Food News from May to December (8 issues).

☐ Send me a sample copy only of ☐ Electric Refrigeration News ☐ Refrigerated Food News.

Name _____

Address _____

City _____ State _____

E. R. N. 5-17-33

Note:

These rates apply to the renewal of old subscriptions (in U.S. and Postal Union Countries) as well as to new orders. If your subscription has expired, you may use this coupon to renew it until the end of this year.

Canadian rate for this period: $4.00 (instead of $2.00). Other countries: $3.00.

MERRIAM EXPLAINS N. Y. SALES TAX LAW

SCHENECTADY, N. Y.—To clarify terms of the New York state sales tax for its dealers, A. Wayne Merriam, Inc., local distributor for General Electric appliances, has prepared a "catechism" for its readers to acquaint them with the terms of the tax.

The questions and answers on the tax, prepared by A. O. Linzey, treasurer of the distributorship, read as follows:

1. Q. What is the Tax? A. The tax is a license fee of 1 per cent on all retail sales except on such items as are excluded, to be paid by all retailers except those excluded, for the purpose of doing a retail business.

2. Q. What period does the tax cover? A. From May 1, 1933, to June 30, 1934.

3. Q. Who are exempt? A. Any retailer whose total receipts from the sale of taxable merchandise are less than $1,250 for any quarter-year period during time which tax is in effect. Any retailer whose receipts are more than $1,250 and less than $2,500 for any quarter year has an exemption of an amount determined by deducting from the sum of $1,250 the difference between the amount of such receipts and the sum of $1,250.

4. Q. Who pays the tax? A. The dealer is required to pay the tax.

5. Q. Can the tax be passed on to the consumer purchaser? A. Yes it can, but only by fixing the delivered price of the article to include the amount of the tax and no mention made that the tax is included in the sales price. Reason being that this is a license to do a retail business and the purchaser is not required to pay the dealers' license tax by law. At the same time the law cannot fix the retail price of his merchandise.

6. Q. What is the basis of tax figured on? A. One per cent of the total sales price to the purchaser.

7. Q. What is the tax on a discount sale? A. It is 1 per cent on net amount of such sale.

8. Q. What about trade-ins? A. If your delivered price of your merchandise is $200 and you take in a used piece of merchandise on which you make allowance of $25 the tax is 1 per cent on the total sale of $200. There will also be a tax on the amount received for the used merchandise taken in.

9. Q. What about return sales or repossessions? A. These should be deducted from your total sales in the amount of unpaid balance owing by the purchaser at the time the merchandise was taken back.

10. Q. Are sales to building contractors taxable? A. Yes, on the net amount of the billing.

MOSER & SUOR SPONSORS WORLD'S FAIR CONTEST

KANSAS CITY, Mo.—Moser & Suor, Norge distributor here, is sponsoring a salesman's contest which features free trips for the winners to "A Century of Progress" exposition in Chicago. The contest terminates June 1.

Credits are earned by each salesman in terms of "miles." As Kansas City is 450 miles from Chicago, the salesman, in order to obtain the trip, must earn at least 450 credit miles. From 22½ to 64½ miles are credited on the various size Norge models sold during the period of the contest, and for every additional 90 miles over the required 450, $5.00 in spending money is awarded to the salesman.

Included in the trip is transportation to Chicago and return, all meals, hotel accommodations for three nights in Chicago, and other incidental expenses.

An additional feature of the contest is that any dealer sales manager having four men in his organization who qualify, receives a free trip for himself. If three qualify he gets credit for 337 miles and must himself sell sufficient units to make up the additional 113 miles. If two qualify he gets credit for 225 miles and must make up the last 225.

March Power Output Decreases 9%

WASHINGTON, D. C.—Electrical energy generated in public utility plants during March was 9 per cent less than it was a year ago, according to the U. S. Geological Survey. The drop-off, due to a nation-wide slackening of industrial activity during most of the month, was only partially compensated for by the resumption of greater activity toward the end.

Forty-five per cent of the 6,635,956,000 kwh. generated, or 2,989,665,000 kwh., came from water power. These quantities include the output of central stations, plant for electric railways and of railroads for electric traction, Bureau of Reclamation and public works plants, and that part of the output of manufacturing plants which is sold.

Average daily production was 214,100,000 kwh., almost 4½ per cent less than in February of this year.

A Frosty Exhibit

Deluxe and standard models of Stewart-Warner refrigerators were shown in the company's booth at the Commonwealth-Edison show in Chicago.

MAJESTIC PLANS OUTLINED TO 125 EASTERN DEALERS

HARRISBURG, Pa.—For the purpose of outlining spring merchandising plans on Majestic refrigerators, Peirce-Phelps, Inc., distributor in eastern and central Pennsylvania, called together dealers of the district at a meeting here April 26. More than 125 dealers were present, according to Charles R. Klopp, field sales manager for Grigsby-Grunow Co.

The program was in charge of J. T. Peirce, who acted as toastmaster, and spoke on the subject "A Ball of Steel Makes Ice."

Sales plans, including the "Positive Proof Purchase Plan," were outlined by W. G. Peirce, Jr., chairman of the Peirce-Phelps company. Mr. Peirce also explained the essential relation between the success of the independent electrical appliance dealer and the independent distributor of appliances.

Joseph Doyle, Grigsby-Grunow field representative, described to the dealers present Majestic sales promotion plans such as the "Friends of Majestic" user plan, and the "Shadow Cut-Out Direct Mail," program. He also explained the importance of the "Big 10 Features" as talking points.

Mr. Klopp told of Majestic factory activities during this year, and how Grigsby-Grunow expects to cooperate with its selling forces.

Among prominent dealers represented at the meeting were R. B. Levitts of Lebanon, Julius Music Co. of York, Stienman Hardware Co. of York, and Bowman's of Harrisburg.

Rental Purchase Plan Increases Range & Heater Sales

AUGUSTA, Me.—Increases of 43 per cent last year in the use of electric water heaters on the Central Maine Power Co.'s system, and of 280 per cent during the last six months of 1932 in range sales, has been attributed to the company's recently introduced rental purchase plan for water heaters and free wiring for ranges.

Cooperation of dealers in both plans enabled the power company to withdraw from the wiring business during 1932.

Estimated increase in revenue from the use of household appliances last year was in excess of $83,000, in spite of the fact that merchandise sales decreased 42 per cent in 1932. Lower unit prices was believed to be the cause of this decrease.

Central Maine Power Co.'s rural service has also grown during the past five years. Average use on farms served has risen from 372 to 499 kwh., an increase of 34 per cent.

KNAPP ADDRESSES KANSAS CITY DEALERS

KANSAS CITY, Mo.—John Knapp, vice president of Norge Corp., addressed 200 dealers and salesmen of the Moser & Suor Norge distributorship organization here Monday night, April 24. Other speakers were R. E. Densmore, western sales manager, and W. C. Rowles, divisional manager.

A "Dutch lunch" was served before the meeting.

MARTIN MUSIC CO. WILL SELL MAJESTICS

SPRINGFIELD, Mo.—Martin Music Co., one of the oldest merchandisers of musical instruments in this section, will handle distribution of Majestic products in southwest Missouri and part of northern Arkansas, according to John F. Ditzell, assistant vice president and general sales manager of Grigsby-Grunow Co.

C.I.T. Representative to Aid Westinghouse

MANSFIELD, Ohio—To assist in fitting the deferred payment method of selling to sales of Westinghouse refrigerators and companion appliances, P. W. Jones of Commercial Investment Trust Corp. has been appointed special representative of the finance company to be stationed at the Westinghouse Electric & Mfg. Co. office here.

Mr. Jones assumed his position April 15.

Allen Pays Flying Visit to Dept. Stores

MT. CLEMENS, Mich.—Dropping down here last week, T. Ronald Allen, manager of Copeland Products, Inc., department store division, completed a 7,000-mile flying trip during which he held sales meetings in department and furniture stores from Washington, D. C., to Beaumont, Tex.

The Hecht Co., Washington department store, states Mr. Allen, opened its anniversary sale the day after the banking holiday, using as keynote the slogan, "Let's go forward with the President." Results of the sale have outdistanced last year's sales figures for the anniversary period, many carloads of Copeland refrigerators having been sold in the past three months.

In Atlanta, Fort Worth, Tulsa, Dallas, Houston, Beaumont, New Orleans, and other Southwestern cities sales meetings were put on by furniture stores selling Copeland exclusively. These stores, together with those Mr. Allen contacted in Savannah, Greensboro, Durham, and Winston-Salem, are members of the National Furniture Stores group, the largest chain of furniture stores in the South.

GEORGIA POWER OPENS G. E. ALL-ELECTRIC KITCHEN

ATLANTA — A G. E. all-electric kitchen was opened in the Marietta St. salesroom of Georgia Power Co.'s Atlanta division on April 24, according to I. H. Morehead, Jr., and J. P. Dick, sales supervisor and manager of the division. K. V. P. Burnham, display manager, assisted the General Electric Kitchen Institute in designing the kitchen.

LEONARD APPOINTS TWO DISTRIBUTORS

DETROIT — Appointment of two new distributors, one in the South and one in the Middle West, has been announced by R. I. Petrie, general sales manager of Leonard Refrigerator Co.

Stratton-Warren Hardware Co. of Memphis, through its affiliated company, the Mississippi Valley Furniture Co., will distribute Leonard products throughout a large part of Tennessee and in adjacent sections of Mississippi, Arkansas, and Missouri. R. R. Chisholm will supervise all Leonard activities for the company.

The Lovejoy Co., 927 Main St., Jacksonville, will handle Leonard distribution in the greater part of northern Florida and in nine counties of southern Georgia.

E. M. Vestal is president of the company.

G. E. APPLIANCES USED IN NEW RESTAURANT

HUDSON, Mass.—It may be just a new Spanish custom, but the Spanish Gardens, restaurant in Hudson Square, has been equipped throughout with General Electric appliances.

Walter O'Brien of O'Brien's General Electric Store, local dealer, made the installation of two refrigerators, one range, one beater and mixer, one broiler, one ventilating fan, and one water heater.

In addition, the restaurant boasts a complete set of waffle irons, toaster, coffee urns, and other small electrical appliances.

Equipment also includes Spanish decoration, a dance floor, and a 10-piece orchestra.

Your expense DOLLAR in 1933

THE refrigerator merchant's problem this season is to push sales up while holding expenses down. We believe we can help you do both.

We offer a grade of Financing Service which is protection against the losses and expenses that easily pile up from faulty handling of instalment credit and collection detail. Here is a field in which little mistakes may be mighty costly to you. For that reason C. I. T. has put every step of its refrigerator financing procedure in the hands of specialists. And to do away with misunderstandings as well as all forms of 'red tape', we have brought this complete C. I. T. Service near you, near your purchasers, through our Local Offices.

There is a C.I.T. office in your territory which will check credits, buy paper, make collections...look out for everything. Plan to use it. It will save you money, and help sales by really freeing you to concentrate on selling.

C. I. T. Plans cover approved types of mechanical refrigerators and water coolers, as well as electric ranges and air conditioning equipment. Successful dealers the country over are using C. I. T. Service.

Phone our nearest office for a C.I.T. field-man to call and discuss how C.I.T. Service might aid you.

THESE C. I. T. LOCAL OFFICES WILL WELCOME YOUR INQUIRY

Akron – Albany – Altoona – Amarillo
Asheville – Atlanta – Augusta – Austin
Baltimore – Bay Shore – Beaumont – Beckley
Binghamton – Birmingham – Boston
Bridgeport – Bronx – Brooklyn – Buffalo
Camden – Charleston – Charlotte – Chicago
Cincinnati–Clarksburg–Cleveland–Columbia
Columbus – Dallas – Dayton – Denver
Des Moines – Detroit – El Paso – Erie – Fort Wayne – Fort Worth – Fresno – Glens Falls
Greensboro – Greenville – Hagerstown
Harrisburg–Hartford–Hempstead–Houston
Huntington – Indianapolis – Jacksonville
Jamaica – Jamestown – Jersey City – Johnson City – Kansas City – Knoxville – Lansing
Lexington–Lincoln–Little Rock–Los Angeles
Louisville – Manchester – Memphis – Miami
Milwaukee – Minneapolis – Montgomery
Montpelier–Mt. Vernon–Nashville–Newark
New Haven – New Orleans – New York
Norfolk–Oklahoma City–Omaha–Orlando
Paterson – Peoria – Perth Amboy
Philadelphia – Pittsburgh – Portland, Me.
Portland, Ore. – Poughkeepsie – Providence
Raleigh – Reading – Reno – Richmond
Roanoke – Rochester – Sacramento
St. George – St. Louis – Salt Lake City – San Antonio – San Diego – San Francisco
San Jose – Scranton – Seattle – Spokane
Springfield – Stockton – Syracuse – Tampa
Toledo – Tucson – Tulsa – Utica – Washington
Watertown – Wheeling – White Plains
Wichita – Wilkes-Barre – Youngstown.

C.I.T. CORPORATION
NEW YORK—CHICAGO—SAN FRANCISCO
Completely Functioning Local Finance Offices in the Principal Cities
A Unit of COMMERCIAL INVESTMENT TRUST CORPORATION
CAPITAL AND SURPLUS OVER $70,000,000

GRIGSBY VISITS KANSAS CITY DEALER CONVENTION

KANSAS CITY, Mo.—B. J. Grigsby, president of Grigsby-Grunow Co., paid a flying visit May 2 to the Jenkins Music Co. of this city, newly appointed distributor of Majestic products.

Other factory officials have also been assisting at the organization of this distributorship, including Floyd D. Masters, assistant sales manager, and A. G. Holman and Mr. Werness of the service department.

F. B. Jenkins, Jr., together with F. V. Archer, sales zone manager, and Karl Schmidt of the distributor's service department, have just returned from an extended trip through their sales territory, which includes adjoining parts of Kansas, Missouri, Oklahoma, and Arkansas. Dealer meetings were held at points along the way.

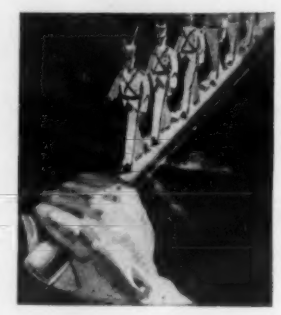
Boston Salesman Gets 6 Orders in Day

BOSTON—O. G. Peters, new commercial salesman for Appliance Engineering Co., Boston distributor of Universal Cooler commercial equipment and Gibson household refrigerators, did a good day's work on April 24.

He started work at 8 a. m., and stopped at midnight. During the 16 hours, Mr. Peters sold five Universal commercial units and one Gibson household model.

Four of the commercial units were sold to restaurants preparing to sell beer. One was sold to a market for use in refrigerating a walk-in cooler, and the Gibson was sold to one of the men in the market, according to E. A. Terhune, president of the distributorship.

BRILLIANT



UNIFORM

Bright like the sun—inside and outside—yes!—every inch. Uniform to an unequalled degree in temper, wall thickness and metal structure—yes!—absolutely standardized. You get a lot more than just good seamless copper tubing when you buy "Wolverine Standard Sealed, Dehydrated" or "Wolverine Standard Open End, Dried". 25, 50 and 100 ft., coils shipped immediately from stock.

WOLVERINE TUBE COMPANY
1491 Central Avenue, Detroit, Michigan

Sales Offices in 29 Cities

Export Dept.—H. M. Robins Co., Detroit

WOLVERINE
REFRIGERATION
SEAMLESS TUBING

30-HOUR WEEK IS FAVORED BY SWOPE

WASHINGTON, D. C.—Gerard Swope, president of General Electric Co., expressed himself as emphatically in favor of the six-hour day and five-day week as proposed in the Black bill, at a hearing before the House labor committee the first week in May.

He felt, however, that Secretary Perkins' panacea for labor ills did not go far enough, and that it was "too rigid for practical application." Mr. Swope's suggestion was for a 26-week working period, with an average of 32 hours a week, instead of 30 hours. The system would be kept flexible by allowing a maximum in any one week of 48 hours and a maximum day of eight hours.

That the measure would make little difference in international competition was Mr. Swope's belief, since in this case the handicap placed on domestic manufacturers from countries with depreciated currencies overbalanced working-hour factors.

200 Attend Delayed Meeting in Denver

DENVER—When the weatherman double-crossed Harry Moll, Majestic distributor in this city, by sending eight inches of snow on the day dealers of the territory were expected in town, the resourceful Mr. Moll thwarted nature by postponing the meeting from April 19 to April 25.

Roads by this time were passable, and almost 200 dealers put in an appearance at the Cosmopolitan hotel, according to Charles R. Klopp, Grigsby-Grunow field sales manager.

Jacques Tyrol, Pacific Coast district sales manager for Majestic products, assisted in planning the meeting, and told visiting dealers about sales features of the refrigeration line.

DETROIT SCRIP ACCEPTED FOR GRUNOW UNITS

DETROIT—By special arrangement with William C. Grunow, president of Grunow Corp., Kern's department store here has announced its willingness to accept Detroit city employes' scrip for Grunow electric refrigerators.

NEW ORLEANS DISTRIBUTOR STARTS OPERATING

NEW ORLEANS, Mich.—Modern Appliance & Supply Co., local distributor of Majestic products, inactive for the last six months, is again in operation with an organization headed by Buford Myers, president.

WASHINGTON CLUB INSTALLS 15-CU. FT. FRIGIDAIRE

WASHINGTON, D. C.—The Baltimore-Washington organization of Frigidaire Sales Corp. has installed one of Frigidaire's new 15-cu. ft. models in the University Club here.

Knapp Speaks to Iowa Salesmen Over Radio

WATERLOO, Iowa—Speaking over radio station WMT here on features of the new Norge, John H. Knapp, vice president and director of sales of Norge Corp., addressed his remarks to dealers' salesmen of the Adams Co., Norge distributor for this territory, on April 26.

Mr. Knapp spoke from the Little Theater of the Air, which accommodated a capacity crowd of 125 persons to hear him. Norge dealers and salesmen within range were urged to tune in on the program.

At 6:45 Mr. Knapp spoke for a half hour to the buying public of this trading area on the subject, "How 100,000 Women Helped Design the New Norge." At 9:45 he talked directly to the Norge sales organization.

Flood Fails to Stop Leonard Distributor

CINCINNATI—When the Ohio river went on its recent rampage and made sections of this metropolis look like Venice, the Marietta Chair Co., Leonard distributor here, got its share of the water, according to Lee Stratton, district manager.

The basement and office floor were inundated, but, says Stratton, "the old veteran Bill Bischoff just moved his office upstairs and went right on selling Leonards."

BORG-WARNER SIGNS FOR WORLD'S FAIR SPACE

CHICAGO—Contracts have been entered into for a large Borg-Warner Corp. display in the Transportation building at "A Century of Progress" International Exposition, according to an announcement from Norge Corp. of Detroit, which will participate in the exhibit of its parent company.

Norge will also have individual displays in the Electrical building, the Porcelain Enamel Parade, and the John Moore Model Home.

2 STUDIES ANALYZE CENSUS OF FAMILIES

NEW YORK CITY—Two monographs based upon the last U. S. census and showing the distribution of native white families in this country and the percentage of home ownership of these families have just been issued by the publishers of *Household Magazine*.

First monograph shows that there are 20,968,803 native white families in the United States. Of these, 56 per cent, or 11,644,531, live in communities under 10,000. The remaining 44 per cent—9,324,272— live in cities over 10,000.

Thirty-two per cent of the country's native white families live in towns of less than 10,000 population. Twenty-four per cent live on farms.

The monograph then shows a breakdown of geographical divisions of the country, with their respective numbers of native white families and the percentages of total populations these families represent.

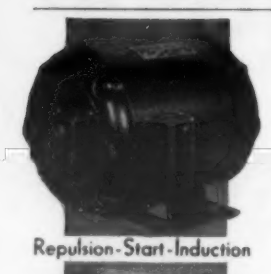
This breakdown indicates that an average of more than 70 per cent of all native white families in communities under 10,000 is contained in the west north central, south Atlantic, east and west south central, and mountain divisions of the country.

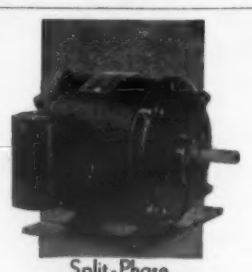
That there is a much higher percentage of native white family home ownership in small towns than in cities is shown by the second monograph.

In communities under 10,000, 55.3 per cent of the native white families own their own homes. The number of owned homes totals 6,439,191. In communities over 10,000, 40.9 per cent of the native white families have their own homes, number of which is 3,816,491.

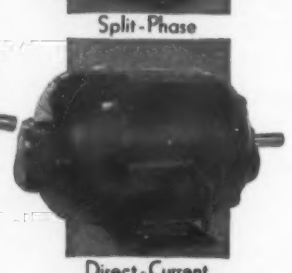
FRIGIDAIRE DEALER SELLS 6 UNITS IN WEEK-END

GREEN BAY, Wis.—From noon on Saturday, April 22, to the following Monday afternoon, the Green Bay Hardware Co., Frigidaire dealer here, sold and delivered six new Frigidaires and was instructed by 12 prospects to prepare orders for signing.


Repulsion-Start-Induction

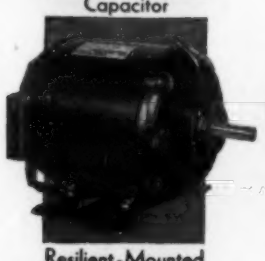

Split-Phase

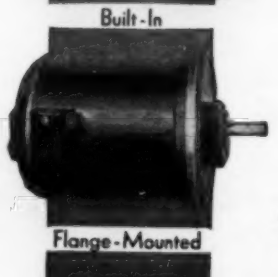
Squirrel-Cage


Direct-Current

Capacitor

Built-In


Resilient-Mounted


Flange-Mounted

You can
Standardize on
Wagner Motors

The Wagner line includes all types of small motors generally applied on refrigerators, making it possible for you to standardize on Wagner motors. Whether alternating or direct current; single or polyphase; open, drip-proof or totally enclosed; rigid or resilient-mounted, flange-mounted or built-in—there's a Wagner motor now in existence, ready to be applied on the job.

There are some 25,000 different type-horsepower-speed combinations of Wagner motors (in ratings of 1/30 to 400 hp). Certainly, your motor requirements can be met by the Wagner line!

For complete details, ask for Bulletin 167 describing Wagner small motors.

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, U.S.A.

S533-2A

Rocky Mountain Division of N. E. L. A. Adopts Merchandising Code

The following code of ethics and selling practices for merchandising electrical appliances has been adopted by the Rocky Mountain division of the National Electric Light Association.

It is axiomatic that competition is the life of trade. In this day of extensive merchandising, however, it is generally recognized that there is a distinct difference between the health-giving stimulus of sound competition and that unbridled competitive selling which manifests itself in wasteful practices and methods. Such so-called competition is an economic loss, which eventually is borne by the buying public.

It is therefore not only highly desirable but directly in the public interest that retail outlets engaged in competitive merchandising eliminate so far as possible those forms of commercial rivalry which result in waste and unnecessarily add to the cost of distribution.

Selling Practices

Uniformity in selling practices is conducive to free and open competition; it contributes to the elimination of waste in distribution; establishes equity among all classes of purchasers and in general tends to keep competitive business on an ethical basis.

Proper Merchandising

It is recommended that utilities do not engage in the selling of appliances or merchandise not directly related to the use of electricity or gas.

Merchandise Pricing

It is desirable in a highly competitive field that the purchaser be in a position to fairly compare prices and values. Hence, on all merchandise which has customer acceptance, the suggested national list retail price should be adhered to. This recommendation, however, is not intended to apply to the sale of so-called distress merchandise.

Trade-Ins and Premiums

Premiums and trade-in allowances afford opportunities for unsound competitive practices. Therefore, in line with good merchandising methods, premiums should not be advertised or offered as an inducement to prospective purchasers.

Maximum allowance on trade-ins should not exceed 5 per cent of the sale price of the new article being sold, except in cases where such maximum would be in conflict with the national trade-in policy maintained by the manufacturer. This maximum of 5 per cent is intended to apply only in those cases where the transaction involves the trade-in of merchandise serving the same purpose as the new merchandise being sold.

The presenting to the public of those appliances not yet having received reasonable customer acceptance should be considered as promotional activities and not as merchandising activities.

Advertising and Sales Representation

All merchandising statements and advertisements should set forth clearly the difference between cash and time prices. Any representation, printed or verbal, made to prospective purchasers should be in strict conformity with the recommendations embraced in this code.

Deferred Payments

The deferred payment feature of merchandising activities should be on an economically sound basis. The customer is entitled not only to full value for the price paid, but also is entitled to know fully the conditions under which his purchase is being made. Consequently, when sold on the deferred payment plan, merchandise should be so quoted that no part of the carrying charge is or can be assessed against cash purchasers. Merchandise should be marked either at a cash price plus a fair carrying charge or at the term price less the proper discount for cash.

With the above provision for a fair carrying charge there should be no limit on the number of months over which deferred payments may be made.

On all sales made on a deferred payment plan a cash down-payment should be collected.

Cash Payments

Full payment made within thirty days from the date of the sale may be considered a cash transaction.

Guarantees

All merchandise should carry only the manufacturer's guarantee, together with the stated participation of the retailer in such guarantee.

Applicability of Code

It is the intent that all the foregoing should be applicable solely to appliances which have received reasonable customer acceptance, and that it is not applicable to appliances still in the promotional and development stage.

Cooperation Essential

Only by organized and coordinated effort can the electrical appliance business reach its maximum in sales volume and insure all merchandising outlets a fair share of such business.

AIR CONDITIONING

Help of Electric Engineers Enlisted In Design of Home Air Conditioners

By W. C. Goodwin,* Air-Conditioning Engineer
Westinghouse Electric & Mfg. Co.

THE electrical engineer has not had, in general, much experience in air conditioning. It has been followed more by the electrical engineer, specializing in heating, ventilating, and refrigeration.

Electrical engineers should know more about this field as they will be more actively drawn into it for the reason that it will influence power distribution. Imagine power motors going on to home circuits.

It will influence motors and control design, especially with respect to noise levels, and it will bring additional problems of control and measurement of temperature, humidity, water, steam, and air.

It will also interest you electrical engineers for the same reason that it will be of interest to all thinking people; that is, it has to do with your own personal comfort and health (your own experience) and that of your family and co-workers.

In this talk I wish to briefly review the principles and factors for conditioning of air, and then to talk about human comfort. I say "review," as to the engineer skilled and experienced in air conditioning, it will be a review, but to most of us as electrical engineers, who have had little need for knowledge of air, it will, I trust, not be a review.

Properties of Air

Air is a mechanical mixture of oxygen and nitrogen and is found in nature and in most living spaces. It has, in addition, CO_2, water vapor, ozone, dust, bacteria, and other things.

Air is a gas and obeys, in general, the laws of gasses. No doubt you will recall Boyle's and Charles' laws which show relations between temperatures, pressures, and volumes.

Air, in general, as stated, has dry gasses plus water vapor. The percentage of the dry gasses does not vary much relatively. But the amount of water vapor mixed with the dry gasses varies over wide limits, and it is this wide percentage variation that affects health and comfort and also materials.

Air is saturated with water vapor at a given temperature when the volume of air will not hold any more water vapor at that temperature. If the temperature is higher, the air is not saturated.

Qualities of Air

There are a few terms or definitions which are used in describing qualities of air:

Dry-bulb temperature is the air temperature indicated by any common thermometer.

Wet-bulb temperature is the air temperature indicated by the rate of transfer of heat from air to moisture on the bulb, and the rate at which this heat evaporates this moisture from the bulb. It is taken by covering the bulb with an absorbent which is moistened, and moving air across the bulb either by whirling the thermometer or blowing air across it.

Humidity is the amount of water vapor in a given unit volume of air.

Relative humidity is the ratio of the density of water vapor per unit volume of air to the density of water vapor at saturation.

Dew point is the temperature at saturation. With 100 per cent relative humidity, the dry bulb, wet bulb, and dew point are the same.

Total heat of the air is the total heat content and is made up of sensible heat and latent heat.

Psychrometric Charts

Psychrometric charts show the relation of the factors just mentioned.

This chart gives the data on the conditions of air and is used by air-conditioning engineers as often as the slide rule by most other engineers. This chart gives us data on quality of air as air and as a gas mixture.

Human Health and Comfort

So far, we have talked about air and not of its use, especially for us as human beings.

Air changes by human use.

Chemical changes of the dry gas are of little concern to us as they are very small under the worst conditions.

Physiological effects are not well known, but the tendency is for expired air to be odorous and somewhat obnoxious.

Man's body temperature is a result of heat production and heat loss. With the body temperature maintained at normal 98.6, the heat production balances the heat. The heat loss for the normal person sitting and doing no physical work is about 400 B.t.u. per hour, or, putting it electrically, it is over 100 watts.

The heat loss is adjusted by a complex system of allowing more blood to flow into the skin and increase the skin temperature and therefore the heat loss. If further loss is necessary, the sweat glands are stimulated, and the resultant moisture is evaporated, provided there is not too high humidity, and there is some air movement.

To decrease the heat loss, in order to keep the body warm, the blood does not flow into the skin due to blood vessel constrictions at the outer surface. This gives more heat insulation and less heat loss.

Three Factors Together

For the sensation of warmth and comfort, the three factors of temperature, humidity, and air circulation must be taken together. These three factors in various combinations have been shown to give the same feeling of warmth. The A.S.H. & V.E. laboratory has made extensive tests and it has reduced these factors to a resultant known as effective temperature. This resultant is actually not a temperature, but is merely an index or factor.

The same laboratory has made a large number of tests showing the results of sensations of warmth and comfort on a number of people. Warmth has been found to correspond with the effective temperature lines. Comfort has been found to correspond to these effective temperature lines within certain limits of relative humidity. (30 to 60 per cent.)

Application of Engineering

The conditioning of air in living spaces is, therefore, the application of engineering to doing the following things:

(1) Vary the temperature by heating or cooling.

(2) Vary the humidity by humidification (adding water vapor), or dehumidification (extracting water vapor).

(3) Vary the amount and rate of air circulation.

(4) Vary the content or quality of the air by adding new air, removing dust, dirt, and other objectionable substances, and in some cases adding to the air.

There are various methods of doing each of these functions, but the results should be the same. The methods are:

Heating—Direct fuel combustion; reverse refrigeration; use of electric power; use of district steam.

Cooling—Mechanical refrigeration; steam ejector; absorption; adsorption; ice.

Humidification—Water spray, steam spray; wetted surfaces.

Dehumidification—Condensation or precipitation; adsorption.

Air quality and quantity—Air filters; air washers; ionization; ozonation; outside air; air circulation.

*From talk before Pittsburgh section of American Institute of Electrical Engineers and engineering section of the Engineering Society of Western Pennsylvania.

LEWIS MAKES TESTS ON AIR-CONDITIONING UNITS

MINNEAPOLIS—Lewis Air Conditioners, Inc., is now making a series of field tests with three air-conditioning systems to determine their comparative operating costs and efficiency in performing various functions of air conditioning.

One of the installations is made in the offices of an oil company, another in a beauty parlor. Equipment installed in these places is designed only to cool and dehumidify the air, according to C. E. Lewis, president.

The equipment consists of ice-melting tanks and a pump for recirculation of low-temperature water to cabinet-cooling units installed in the spaces to be cooled. Cooling load in the offices is 350,000 B.t.u.'s, and in the beauty parlor, 115,000 B.t.u.'s.

Some tests were made on the office installation last summer, but will be continued this season, says Mr. Lewis.

Third installation is in a small office building, where a mechanical system is used to cool and dehumidify in the summer, heat and humidify in the winter season, and filter and circulate the air at all times.

A Frigidaire compressor and cooling coils are used in this system. Cooling of the condenser is done with deep well water having a constant temperature of 52° F. A specially designed duo-thermostat is used to control the system, Mr. Lewis states.

RAILWAYS ADVERTISE CONDITIONED TRAINS

ST. LOUIS—Stressing the comfort of air-cooled dining and lounge cars on its important passenger trains running from this city to the West, South, and Southwest, Missouri Pacific Lines has inaugurated an extensive advertising campaign.

The campaign will continue for eight weeks, and is expected to cost in the neighborhood of $50,000. Large space has been taken in 103 newspapers, outdoor showings in 15 cities have been arranged, and a series of five mailing pieces is to be sent prospective passengers.

Individual advertisements for the Sunshine Special, crack train between St. Louis, Dallas, and New Orleans, carry unusual appeal by announcing "It's 70° in the 'Sunshine' when it's 100° in the Shade."

Other trains, including the Scenic Limited, are similarly advertised.

In addition to featuring the air-cooled cars, the campaign intends to further impress on the public the company slogan, "A Service Institution." A message emphasizing dependability of the railroad's employes from L. W. Baldwin, president of Missouri Pacific Lines, is used as part of the newspaper copy.

Equipment Ordered

EAST PITTSBURGH, Pa.—Orders have been placed with the Westinghouse Electric & Mfg. Co. here for five gear-driven 15-kw. axle generating units which will be used to supply power to cars of the Missouri Pacific Railroad which are air conditioned.

The railway company has also placed an order for two Westinghouse air-conditioning units to be installed in lounge cars operating in Texas.

General Electric Tests Equipment In 10-Room Residence

SCHENECTADY, N. Y.—General Electric Co. has created an indoor-weather laboratory out of the 10-room dwelling house which was used to test the G. E. oil furnace. In it two engineers, Elliott Harrington and J. W. Stribling, will live under various experimental weather conditions.

The entire dwelling has been equipped with air-conditioning apparatus. Air conditioning both by the unit method and the central regulating plan will be tested. A method of reading, from one central point, the air temperatures in any room in the house has been established.

All four of the fundamentals of air conditioning—temperature control, humidity regulation, air cleansing, and air circulation—will be applied and studied under all the ordinary conditions of a home of average size, with the physical senses of the occupants, in addition to an unusual array of laboratory instruments as the source of data records.

Objectives of Tests

The composite objective of this indoor-weather proving house, as laid out by the engineers, is to develop principles of design for future equipment, to establish principles of application of equipment for actual service, to afford an opportunity for commercial demonstration, and to engage in research. Plans already formulated lay stress upon various ideas which are more or less new.

For the past five years this same residence has served as the proving ground for the oil furnace developed by General Electric. This coordinated type of automatic oil heating will be the chief part of the winter air-conditioning investigations to be carried on there in the future.

Earlier studies have already required the installation of extensive ducts and the use of improved types of room coolers and combination units for delivering either heated air or cooled air, according to the season, with filtering, humidifying, and circulating devices.

Much of the experimental study at the test home will center in the library. That room is supplied with eight openings of air ducts. Some of these are in the walls, others are in the floor, thereby permitting air currents to be produced either vertically or horizontally.

Library Test Room

Thermocouples for registering temperatures, and unit air conditioners for serving an individual room, will be placed there in the library. It will be the unit test room of the dwelling.

The house has been fitted with an attic ventilator, to be controlled by means of a differential thermostat. This will operate on the theory that a certain degree of cooling can be obtained in the summer by exhausting the air from the attic.

In the basement of the house is an instrument room which is connected electrically by a telephone relay system with 100 thermocouples scattered throughout the dwelling. Every room has its quota of these thermocouples, and through the relay system the temperature at any moment at any of these locations all over the house can thus be read and recorded in the instrument room.

This room is immediately adjacent to the compartment containing the automatic oil furnace and the units for the central air-conditioning system.

Sign your CUSTOMER'S CHECK

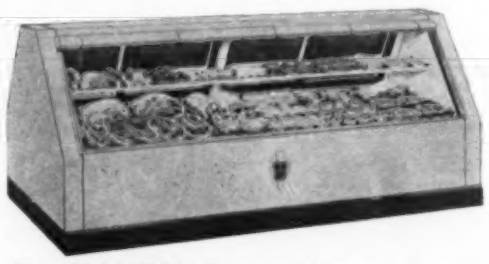
Learn the value of the words: "Insulated with Corkboard"

AS Mr. Customer, you'll get a new viewpoint on many things. On insulation, for instance. When you hear the salesman say: "This equipment is insulated with Armstrong's Corkboard," you'll appreciate the selling value of that phrase. For Mr. Customer knows corkboard is efficient—makes refrigerated equipment operate more economically and last longer.

* * *

In building refrigerator sales there is definite selling value in Armstrong's LK Corkboard Insulation. Manufacturers are cashing in on corkboard's thirty-year record as standard insulation in the ice and cold storage business. They are making LK Corkboard insulation help to increase their sales.

We should like to tell you more about LK Corkboard's light weight, rigid strength, high moisture resistance, and lasting efficiency. May we send you complete data and samples? Armstrong Cork & Insulation Company, 917 Concord Street, Lancaster, Pennsylvania.

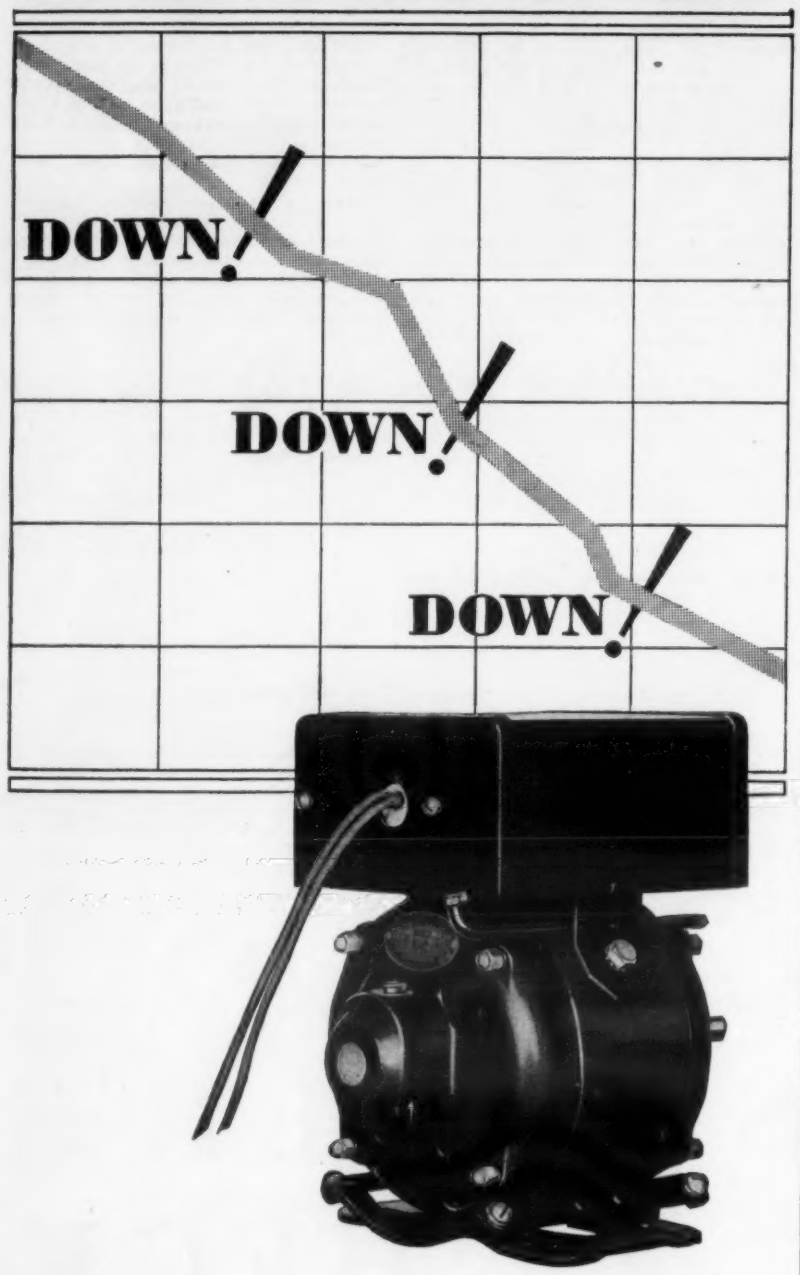


This Model HD3 Hussmann-Ligonier Meat and Delicatessen Case provides excellent display for food products. Economical operation is assured by thorough insulation with Armstrong's LK Corkboard.

Armstrong's TYPE LK Corkboard Insulation

Efficient, Durable Insulation for Refrigerated Equipment

G-E TYPE KC



go your service problems

WITH the Type KC *"care-free"* capacitor-motor in your refrigerator, the graph of your service complaints approaches zero. The enviable reputation of this motor is attested by the many manufacturers who have adopted it.

The *"care-free"* motor, because of extreme simplicity of design, is unusually dependable. Its long life is the result of minimized points of wear.

The Type KC *"care-free"* capacitor-motor represents the highest achievement in refrigerator-motor design—reliable, quiet, and economical. It is the *correct* motor for your refrigerator.

210-152

GENERAL ELECTRIC

Forced Air Ductless Coolers Permit Rapid Product Cooling with High Refrigerant Temperatures

By William B. Rorison, Refrigerating Engineer, Carrier Corp.

A brief review of the past three decades of refrigeration progress will show the various influences which lead to the development of ductless forced air cooling as applied by Carrier Cold Diffusers. Thirty years ago a refrigerating plant of moderate size was a conglomerate of built-up pipe coils, brine hold-over tanks, a variety of forms of condensers and what-not and the compressor.

What a halo of glory attaches to the compressor of those days. It was the foundation upon which any refrigeration company was built. The machine shop which was fortunate or unfortunate enough to connect with an ice machine inventor and could produce an ammonia compressor which would pump, became over night a full-fledged refrigerating engineering concern.

The outstanding advance in the first of the three decades was the development of the vertical enclosed-type compressor. This paved the way for the development of automatic control, because the new design eliminated the piston rod with its troublesome stuffing box, and provided continuous automatic lubrication of all compressor parts.

Automatic Controls

During the second decade most of the effort was expended upon filling orders, since this was the war-time period. However, automatic control had in the meantime proved its place in the industry. The automobile had also come into its own. With it came the urge to go places so that to be salable an ice machine had to operate automatically.

This did more than anything else to cause the general adoption of, and improvement in, automatic control by the refrigeration industry. It brings us to the beginning of the third decade, the period which is just now ending.

It brings us to the time when there was a well-defined effort by the industry to break out from the chains of tradition. It marked the general introduction of the package-type condensing unit, small, medium, and large size, all fully automatic.

Hold-Over Tanks Junked

Hold-over tanks were relegated to the junk pile. These were not needed with 24-hour service on tap at the will of a temperature-controlled switch. Expensive brine circulating systems, to a great extent, were thrown into the discard. Automatic direct-expansion systems were developed having even greater flexibility than the brine systems.

With low evaporator temperatures no longer needed for hold-over tanks and brine systems in the ordinary run of work, together with the progressive education of the buyer and his more critical attitude towards operation costs, there opened up a new line of thought.

Maybe an evaporator temperature of zero degrees did not make for good economic balance. Perhaps with a little added to first cost by increasing the cooling surface and thereby raising the evaporator temperature, a better economic balance could be had.

The fact that refrigeration produced at high evaporator temperature called for less power per ton of i.m.e. was not unknown, but the traditional 15 lbs. suction pressure for zero evaporation with ammonia seemed hard to break away from. We did reach 5° evaporator temperature with coil space crowded to the limit, and much ingenuity was shown in forming coils to accomplish this result.

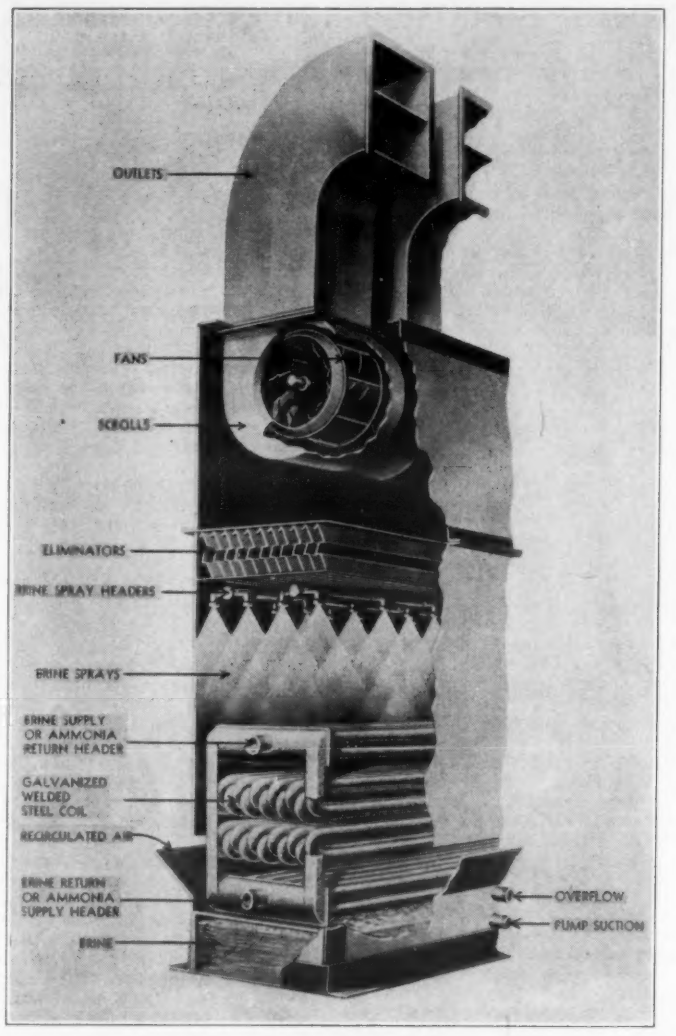
Methods of Estimating

There we stuck for two or three years; stuck until a complete analysis of the situation brought out the fact that rule-of-thumb methods of estimating for the old time short operation did not apply. Their use called for condensing units as high as 100 per cent oversize for the true load.

Establishment of rational methods of estimating allowed a gain of another five or six degrees in evaporator temperature. With it there developed not only a lower operating cost, but a lower installed cost. We were now definitely on the right track, and shortly, through the urge for yet higher evaporator temperatures, there was developed the finned-type evaporator.

These took many forms. Extravagant claims have sometimes been made concerning them. They did, when properly designed and located, allow evaporator temperatures of 18° to 20° F. in 35° F. refrigerators. Any attempt to reach beyond this point resulted in so crowding the assembly that its efficiency fell off and an abnormal cost for surface developed.

It is significant that throughout the development, aiming at better economic balance, we had been fighting the limitations to heat transfer imposed by gravity circulation. The low rate of air movement past the cooling surface gives a low rate of heat transfer.



Carrier's floor mounted, spray type Cold Diffuser, available in sizes from 1,200 to 11,000 c.f.m., and up to 15 tons of refrigeration.

When surfaces are brought into close proximity, gravity induced air movement between the surfaces is badly retarded, and the transfer rate correspondingly reduced. With the reduced heat transfer rate, the frost would not clear out during normal shut down. A cumulative snowing up resulted.

It is further significant that considerable of the operating economy secured by the use of finned evaporators resulted from their ability to present a clean surface at the start of each operating period.

Features of Ductless Coolers

Now I bring you to the present, and I trust that with this brief review of the past it will help you visualize the usefulness of ductless forced air cooling. A few features of these coolers are:

They can operate at the refrigerant temperature which will produce the best conditions for the stored product or the product being cooled.

They permit evaporator temperatures within 10° of storage temperature. Hence with storage temperatures of 35° F., the evaporator temperature may be 25° F. or higher.

Automatic defrosting under the most severe conditions, in rooms above 33° minimum temperature is an inherent quality.

Expensive coil deck and gravity flow baffles are eliminated and some reduction of storage room height is permissible; thereby cold storage design and construction work is simplified.

Product cooling and carcass chilling is done at a more rapid rate, and without the fog and other nuisances which accompany gravity cooling.

Collection and disposal of condensed moisture is a simple accomplishment because of the compactness of the cooling surface.

Net salvage value is almost equal to first cost.

Increased Air Turbulence

It is true that there have been instances of failure of forced air ductless cooling jobs. These have come about by failing to realize that this dynamic type of equipment requires recognition of fundamental laws which gravity cooling does not demand.

There is with these systems an unavoidable increase in air turbulance within the storage space. There is a tremendously increased air turbulence across the cooling surfaces.

Hence, if we bring into play the law which states that *the increase in the rate of evaporation is nearly in direct proportion to the increase in air velocity, and that it is in direct proportion to the difference in vapor pressure between the vapor pressure of the water and the pressure of the vapor in the air,* we can see how failures could result.

With gravity air circulation, air turbulence (velocity over the surface of the goods) is very small, hence only the effect of vapor pressure difference influenced evaporation from product and the evaporation was relatively slow.

Inverse Use of Law

At the cooling surface, where the vapor pressure is lower than the surrounding air, and where the law works inversely to control condensation rate, the slow moving air worked to slow down the condensation rate and the resultant frost formation per foot of surface.

However, what the cooling surface lacked in condensation rate per foot was more than made up by the extent of this surface. Hence the vapor pressure in the air was comparatively low, and there existed a wide difference in vapor pressure between the water at the surface of the product and in the air.

How the lack of velocity could so correct the effect of wide vapor pressure difference is explained if we visualize a film of nearly saturated air blanketing the product surface.

This film would be at a vapor pressure approaching that of the surface water, and the evaporation rate would be slow. The blanketing quality of this film was great because only by natural diffusion into the region of lower vapor pressure could its vapor pressure be reduced.

At the cooling surface a reversed condition existed. There the moisture to reach the surface had to diffuse through a film of air having a vapor pressure nearly equal to that for the cooling surface.

With Cold Diffuser cooling we must recognize the significance of these things since with their use the blanketing effect of surface films has been almost entirely eliminated.

We must know the characteristics of each product. We must know the optimum temperature to be maintained. We must know for each product the permissible air turbulence, and with a given turbulence the correct relative humidity, since the relaive humidity is a function of vapor pressure and temperature of the air.

We must select Cold Diffusers and other plant equipment so that when maintaining the required temperatures, the condensating rate of the Diffuser will just equal the normal evaporation from the product plus moisture introduced by incoming air. If this is not done, the relative humidity will not meet requirements.

The 1400 series of Cold Diffusers is designed particularly for small medium sized meat market coolers. For other models a simple grouping of products in four classes has been prepared, together with the average tem-

(*Concluded on Page 19, Column 3*)

AMERICAN RADIATOR WILL CONDITION AIR BY STEAM EJECTOR

(*Concluded from Page 1, Column 5*)

iron tank. Manual or automatic control can be employed.

The steam ejector system, or Decalorator as it has been trade-named, can be made in capacities from 2.5 to 1,000 tons of refrigeration per day, cooling water to 40° F. or lower for circulation through an air-cooling system.

Pictured on page 1 of this issue is an installation of a Decalorator steam ejector in connection with a series "R" air-conditioning system for cooling residences.

The flow diagram on this page shows a diagrammatic application in cooling water from 80° to 40° F. Warm incoming water enters the evaporator from the air-cooling system and is projected as a fine mist from several stainless steel spray nozzles above the evaporator.

Steam Attains High Velocity

Steam introduced through the steam jet attains a very high velocity in the narrow section of the Venturi tube to produce a vacuum of about 29¾ in. of mercury in the evaporator. At this high vacuum, water boils at about 40° F., the heat required to vaporize water being taken from the body of water in the bottom of the evaporator. Sensible heat of the water is given up in the form of latent heat in the vapor.

Sufficient water surface is presented by the spray to cause almost instantaneous evaporation of a small quantity of water. Removal of the heat of vaporization of the spray serves to chill the entire body of water in the evaporator to the desired temperature.

This action maintains the water in the bottom of the evaporator at 40° F., at which temperature it is pumped to the air-cooling system and subsequently returned at 80° to the evaporator sprays.

Vacuum is constantly maintained in the evaporator, during its operating cycle, by a series of ejectors and condensers. The primary ejector compresses the low-pressure steam (or water vapor), plus the air which entered the system with the water, from a 29¾-in. vacuum in the evaporator to a 28-in. vacuum in the primary condenser.

Operation of Condenser

In the primary condenser, steam from the evaporator and propelling steam from the primary ejector are condensed by cooling coils through which city tap water is circulated. Steam condenses at a temperature of 101° F. at this pressure (22-in. vacuum).

Air and water vapor in the secondary ejector (similar in general design to the primary ejector) are compressed from the 28-in. vacuum of the primary condenser to a 22-in. vacuum of the inter-and-after condenser, where any remaining water vapor is condensed.

The last ejector raises the pressure of the air to atmospheric so that it can be discharged to the atmosphere. All condensate is piped back to the boiler feed system.

Water level in the evaporator is kept constant by the float control which acts on the valve in the warm water supply line.

Primary condenser and inter-and-after condenser shown in the above diagram are of the surface type (welded steel construction) but may be of the barometric type where conditions make it advisable, engineers of the company state.

Condensing water may be taken either direct from a city water supply, or may be recirculated through a cooling tower, depending upon the size of the system and local water costs.

A thermostatic control valve is provided with the Decalorator to operate on the main steam line to shut off the steam supply feeding the ejectors when the chilled water temperature goes below any desired temperature.

Features of the steam-ejector system are its lack of moving parts, safety of refrigerant (water), and its relative compactness in the large capacities, designers point out.

Characteristic curves of a 100-ton steam-ejector system designed to chill water to 50° F. show that refrigeration capacity of the unit rises with increased temperatures of the chilled water. Thus, a capacity of 138 tons of refrigeration can be obtained with the same unit operating to chill water to only 65° F., while only 25 tons can be produced with a chilled water temperature of 32° F.

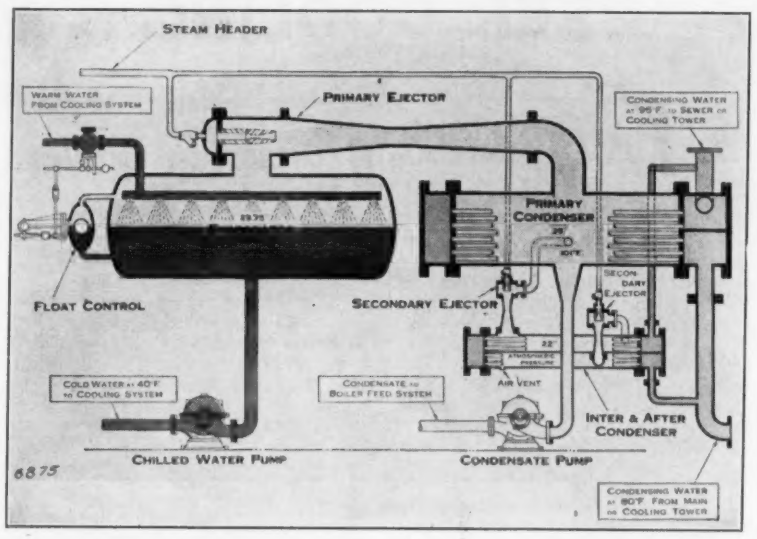
The Decalorator will produce water as cold as 32° F., its designers claim. Steam and water consumption per ton of refrigeration will depend largely upon the desired temperature of the chilled water and steam pressure, being most economical when these factors are highest. When temperatures as low as 32° F. are maintained in the cooling water, very nearly a perfect vacuum must be produced.

In addition to air conditioning, the steam ejector is applicable to cooling of drinking water for circulation in large office buildings, hotels, etc., engineers claim, because it does not affect purity of the water being cooled.

American Radiator's Arco air-mixing box, another new product briefly described Monday, is installed in the wall or in a windowseat of buildings to introduce conditioned air. The box employs a number of special nozzles to introduce the air under high velocity and low temperature, diluting the room air and creating circulation in a room by induction of mild air currents.

Arco air-mixing boxes are being installed in the new Postoffice Department building, Washington, D. C., and in the British and French buildings at Radio City, New York.

Steam Ejector System



Schematic diagram of American Radiator's Decalorator, described at left.

COLD DIFFUSERS PERMIT RAPID PRODUCT COOLING

(*Concluded from Page 18, Column 1*)

perature difference between room and refrigerant:

Class 1—Cut meats, vegetables, cheese drying, etc.

High relative humidity, rapid rate of moisture evaporation, temperature difference between air and refrigerant 10 to 12° F.

Class 2—Eggs, boxed poultry, long storage of cheese, etc.

High relative humidity, low rate of moisture evaporation from product, temperature difference 5 to 6° F.

Class 3—Beef, veal, pork and fruit.

Moderate relative humidity, moderate rate of moisture evaporation, temperature difference 12 to 15° F.

Class 4—Chocolates, furs and woolens, canned goods, barreled goods, etc.

Low relative humidity or relative humidity not important, low rate of moisture evaporation, temperature difference 20 to 30° F.

1700 Series Brine Spray

Applicable to the foregoing classes except for chocolates, furs and woolens. Increase temperature difference 20 to 25 per cent except for Class 4 where it may be the same.

The brine spray Diffuser is not generally used where the 1500 and 1800 series are applicable due to its higher cost. The field for which they are particularly suited is carcass chilling and for long storage of these chilled carcasses. For the former the temperature difference should be 20° and for the latter 15° F.

For chilling work, using brine spray models, the Diffuser and refrigerating plant capacity should be 50 per cent greater than the average chilling load, when the refrigerating plant operates on other evaporators in addition to the chilling load. This also applies to bottled milk storage rooms.

Back Pressure Valves

Back pressure valves are usually needed on the other evaporators to prevent abnormal reduction of evaporator temperature when the chilling rate reduces during the latter part of the chilling period.

Where surface type Diffusers are used as in bottled milk storage rooms, and the cases are douched as they enter, the Diffuser may be selected to equal the average load. Only the refrigerating plant need have the 50 per cent excess capacity.

This is made possible by the fact that the surface type Diffuser can take on a heavy condensing load without seriously effecting its capacity to cool the air. The condensing load is known as "latent heat load." Cooling the air is known as "sensible heat load."

Sensible Heat Load Reduced

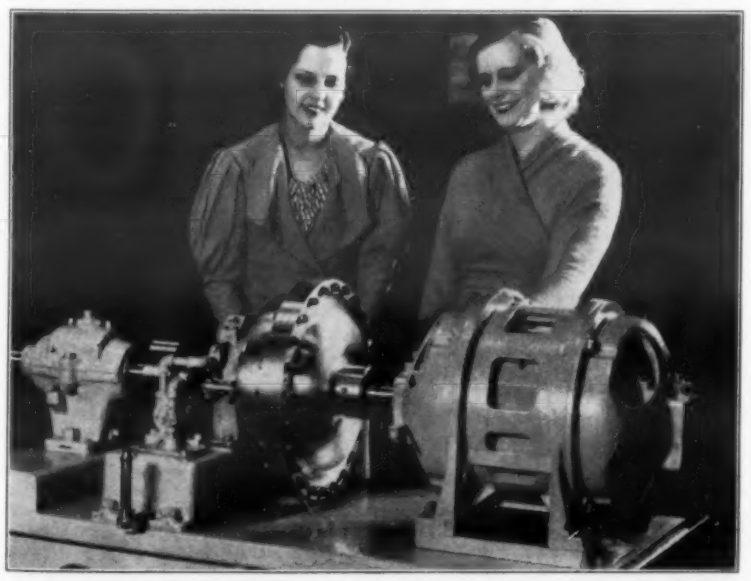
The imposition of latent heat load equal to 50 per cent of the sensible heat load reduces the sensible heat capacity about 10 per cent. Hence under this condition, the surface type will have approximately 40 per cent greater capacity than its basic rating.

Cooling of product equal to the latent heat load is accomplished where the moisture causing the latent heat load has evaporated from the surface of the product, since the heat of condensation is equal to the heat of evaporation.

Since the Cold Diffuser must be selected to meet the summer time peak conditions, it follows that the condensing rate is fixed for that condition. Hence with the shorter operating time in winter, the relative humidity in the storage will be higher. Usually this is a favorable condition but in long storage of meats this condition is conducive to mould propagation.

To counteract this condition, heat must be introduced to prolong the running time of the cooling equipment. Hence we have a paradoxical situation of steam heat in a cold storage room while we refrigerate the room.

Variable Speed Coupling



New hydraulic coupling of American Blower Co. designed primarily to vary the speed of fans driven by constant-speed a.c. motors. To vary speed of the driven half of the coupling, oil is pumped into or from the cast-iron tank (at left center). When coupling is full of oil it runs at full speed, which may be reduced to 20 per cent of full speed when all oil is pumped into the tank. Mary Thomas and Jeannette Galyon exhibit remarkable interest.

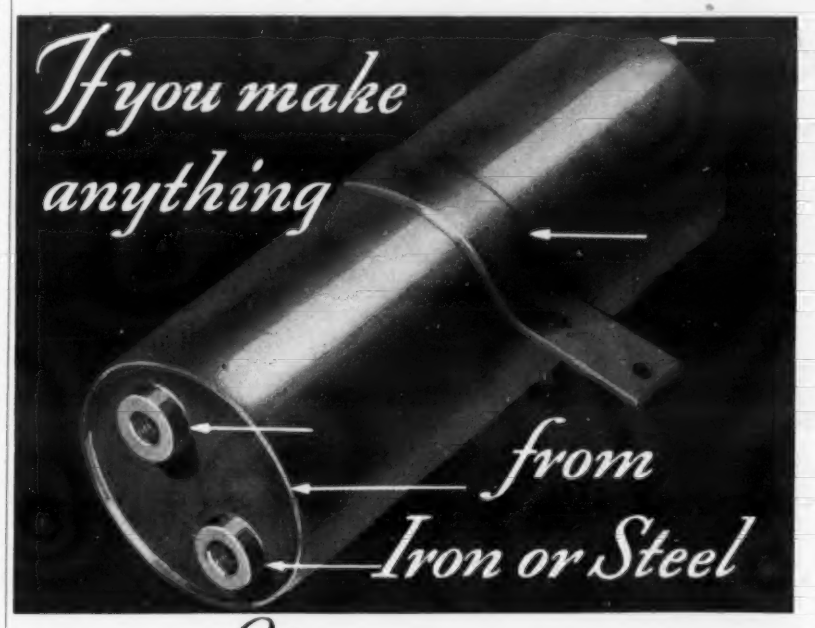
THE RETURN OF BEER

Legal beer means a great increase in the sale of dispensing devices—mostly mechanically cooled—each of them requiring fittings designed to accomodate the block tin tubing required for beer.

The facilities of Commonwealth Brass Corporation are adequate to meet any demand for this type of connection. Any size, shape or style needed; either made from forgings, extruded rod, or castings can be supplied.

We solicit inquiries for these fittings and will be glad to quote on receipt of sample, specification or sketch. Our facilities for manufacture enable us to deliver superior type fittings at attractive prices and and each fitting is "Built Right to Stay Tight."

COMMONWEALTH BRASS CORPORATION
Makers of fittings for more than 25 years
COMMONWEALTH AVENUE AT G.T.R.R. - - DETROIT



You can use
COPPER-HYDROGEN
Electric Welding

For Lighter Weight, Greater Strength, Better Appearance and Lower Cost!

The improvements and economies made possible by Hydrogen-Welding may be applied to practically any product which can be assembled from iron or steel parts. Important advantages of this process are: a copper-iron alloy bond that is gas-tight and as strong as the part welded. A clean, scale-free surface both inside and outside. Clean-cut appearance with no apparent application of metal. Automatic quantity production. The replacement of expensive parts by inexpensive stampings and drawn shapes.

There is practically no limit to the number of individual welds that can be made in a single piece and in one trip through the furnace. A snug fit or contact of the parts is all that is required.

Parts may be furnished to Bundy machined for a snug fit; or Bundy will produce the finished parts to your specifications. The illustrated booklet shown below tells the whole story. The coupon will bring your copy by return mail.

BUNDY
TUBING COMPANY

BUNDY TUBING COMPANY
4827 Bellevue Ave., Detroit, Mich.
Please send me a copy of your illustrated Hydrogen-Welding booklet.
Name_____
Position_____
Firm_____
City_____

To Better Serve You—
—Larkin Line of Coils again Increased

Now Over 40,000 Larkin Coils in Daily Use

LARKIN Manufacturing and Warehousing facilities are keyed to quick, convenient and complete service to the trade.

Keeping step with new equipment developments, the Standard line of LARKIN *Original* 100% Vertical Surface Aluminum Plate COILS has been stepped up from 95 to 124 stock Models and Sizes delivered from Atlanta, Brooklyn or Chicago. Special sizes from Atlanta only.

STANDARD FACTORY EQUIPMENT WITH

COPELAND : SERVEL : WILLIAMS ICE-O-MATIC : CARRIER - BRUNSWICK - KROESCHELL : MAYFLOWER : UNIVERSAL : KULAIR : ZEROZONE : M & E : MODERN : STARR : MOHAWK : APEX : DICELER : LIBERTY : H. M. Robins Co., *Export and Others.*

LARKIN Refrigerating Corporation

Originator and Manufacturers

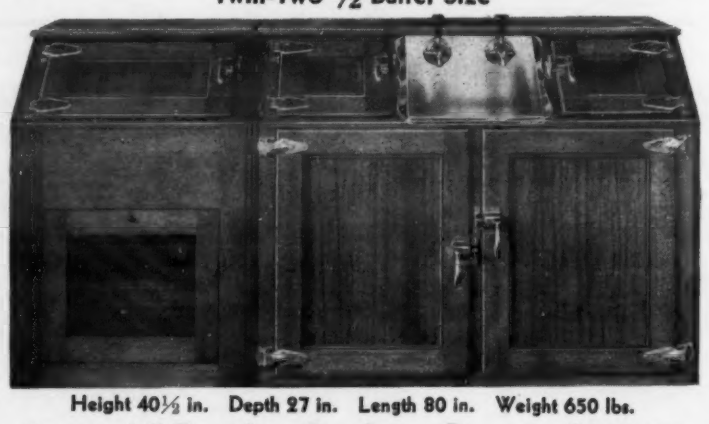
ATLANTA, GA., U.S.A.

WAREHOUSES
Brooklyn - Chicago

U.S. PATENT No. 1,776,235.

LARKIN COILS

SUPER-COLD
DRAUGHT BEER CABINETS
Twin-Two ½ Barrel Size



Height 40½ in. Depth 27 in. Length 80 in. Weight 650 lbs.

Comes All Together, Ready to Operate, $370.00
F. O. B. Factory

Above price includes mahogany cabinet finished all sides and top, one heavy duty ¼ HP. compressor, heavy duty evaporator, brine tank, two block tin beer cooling coils, two beer faucets, compressor stand with bottle compartment with capacity of 72 pint bottles, finned coil in bottle compartment, thermostatic valve and all necessary refrigeration valves and fittings, connected up and tested ready to operate by connection to light or power lines. Metal lined, extra heavy hardware.

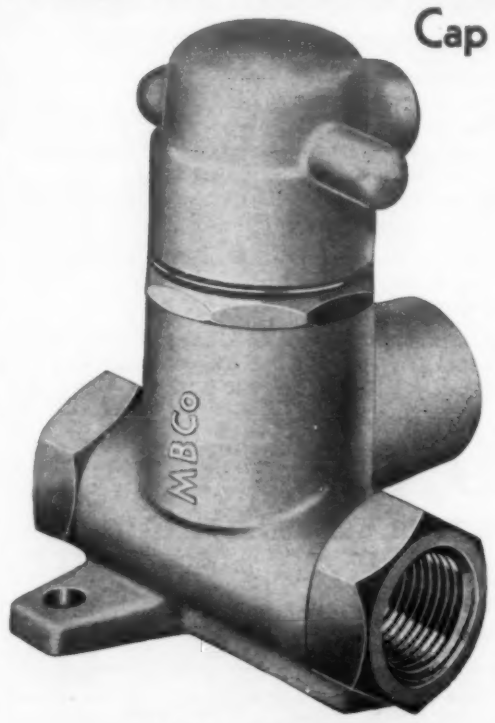
If desired without compressor and thermostatic valve deduct—$95.00.

Other models in singles and double barrel capacity from $135.00 and up. Liberal discounts to dealers, immediate shipment in any quantity. Write nearest office for catalogs and circulars with prices and discounts.

Commercial Refrigerator Mfg. Co., Ltd.
1020 East 59th St. Los Angeles
Chicago
1500 So. Western Ave.
New York
114 East 47th St.

Also write nearest Super-Cold Sales Companies at 2106 Smallwood St., Baltimore; 621 Washington Ave. North, Minneapolis; 18th and Minnesota Ave., Kansas City; 1545 North 15th St., St. Louis, Mo.; 1037 Genesee St., Buffalo; Box 41 West Side Station, Youngstown, Ohio; 220 "L" St. N. E., Washington, D. C.; 2204 Ellis St., Boise, Idaho; 146 North 6th St., Portland, Oregon; 25 East Adams St., Phoenix, Arizona.

MUELLER Double-Packed Operating Valve with Seal Cap and Integral Operating Wrench
FOR HEAVY DUTY



AY-13181 Code-Sturbig

This valve is the answer to the need for an extra sturdy valve for large commercial installations and for air-conditioning work.

Its openings are FULL FLOW, assuring unrestricted passage of the refrigerant up to and including 5/8" O. D. diameter tubing.

It is double-packed and incorporates the back-seating feature. The body, which is extra heavy, and the seal cap are of forged brass; the stem is of Tuf-Stuf, a corrosion resisting alloy of great strength. The mounting plate is integral with the body.

The packing is not affected by heat or any other of the refrigerants in general use and may be replaced with the valve under pressure without loss of refrigerant or interruption of service.

Note—Mueller AY-13181 is one of the new line of full flow valves, *fully described and illustrated in our new catalog, R-2. Send for your copy.*

Mueller Brass Co.
PORT HURON, MICHIGAN

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago

We manufacture a complete line of valves and fittings and can supply your every requirement

BEER COOLING

DRY KOLD DESIGNS SEVERAL NEW BARS

NILES, Mich.—Just announced by the Dry-Kold Refrigerator Co. here is a series of service bars, bottle refrigerators, and keg storage refrigerators for ice and mechanical refrigeration.

Novelty box or service bar No. 99 holds two half-barrels in the lower part of a 52x25x41-in. cork-insulated cabinet, with a draft arm to draw beer from each half-barrel. Draft arms are located in the center. Each faucet draws through a 50-ft. coil of ½-in. block tin.

Interior is lined with 24-gauge galvanized iron, while the exterior front, rear, and ends are of five-ply laminated oak. Pressure in the barrels is supplied by a hand-operated air pump. Model 100 is of similar design, but handles only one half-barrel.

Model 97 is a flat-top service bar for mechanical refrigeration, cooling two half-barrels in a cork-insulated compartment at the left. At the right are two draft arms, hand air pump, water faucet, sink, and drain. Dimensions: 82 in. wide, 29 in. deep, and 41 in. high.

Designed primarily for ice, but adapted to mechanical refrigeration, model 98 is a long service bar with two separate compartments for half-barrels in one end and a complete workboard in the other. An ice-bunker chamber separates the beer-cooling compartments. Below the workboard is a bottle-storage compartment. Dimensions: 120 in. long, 29 in. deep, and 42 in. high.

To cool one half-barrel and 48 bottles, Dry-Kold offers its model 98 service bar for either ice or mechanical refrigeration, finished in white porcelain, Monel metal, or plywood exterior. Workboard is at the right side, bottle storage in the middle, and the barrel-cooling compartment at the left side facing the rear of the bar. Size of the cabinet is 68x29x40 in.

Model 91 is intended for ice refrigeration only, and is a service bar with a center workboard and half-barrel compartments at each end. Model 92 is same as 91, but space under the workboard is arranged for installation of a refrigerating machine instead of an ice bunker.

For storing barrels the company has designed two walk-in coolers for mechanical refrigeration. First is 6 ft. by 6 ft. by 9 ft. 4 in. high, while the second is 8 instead of 6 ft. wide. These are lined with galvanized Cop-R-Loy metal, and have removable oak floor racks. Insulation is 3 in. of corkboard.

Exterior is of plain painted pine or varnished oak. The heavy entrance door has ball-bearing hinges, an automatic inside releasing lever, and rubber gasketed joints.

To cool bottled beer two bottle refrigerators have been introduced. These have shelves to hold three layers of upright bottles, accessible from two doors. Model 95 is 60x31x54 in. and holds 192 bottles, while model 195 is 60x31x38 in. and holds 144 bottles. Front, top, and ends are of five-ply oak, back is of pine.

All of Dry-Kold's beer coolers are insulated with corkboard. Draft-beer coolers all use 50 ft. of ½-in. block tin.

Brunswick Coolers Employ Electric Refrigeration

By R. H. Guyton
Refrigeration Engineer
Brunswick-Balke-Collender Co.

MANY features of the old novelty box have been discarded in development of the Brunswick counter cooler workboard unit. Designers have taken the novelty box and made it flat, so that the top of this particular unit has utility space available for glasses, steins, or other articles. Elimination of the coil box and the use of a Temprite tap cooler produce a flexibility of operation and pre-cooling that was unknown in the "good old days."

The Temprite unit ordinarily holds the beer to a predetermined specified temperature. However, if the beer is delivered from the brewery to the customer colder than the setting on the Temprite, it necessarily follows that heat cannot be introduced to increase this temperature.

Regardless of what higher temperature the beer may enter within the capacity of the unit and compressor, the customer will dispense his beer at a temperature very close to that which he wants at all times, whether he uses one glass, or whether he uses the equipment to its fullest capacity per hour.

With the use of the Temprite tap cooler, the Brunswick unit is able to produce a definite serving temperature because it cools the beer as it passes through; and the Temprite cooler acts as a balance wheel for the entire system. If necessary, the Temprite can do the bulk of the cooling work and operate the compressor at a high back pressure—thus stepping up its capacity.

During this peak load period, the actual cooling in the compartments has been reduced materially, because the fin coil temperatures have been raised by the increased back pressure.

Load Balancing

As the load on the Temprite decreases the compressor automatically goes to lower back pressure, thus causing a lower temperature in the compartment which holds the bottled beer. This reduces the amount of cooling to be done by the Temprite. (The Brunswick counter cooler workboard unit maintains a temperature of 40 to 50° F. in each barrel compartment.)

Fig. 1 shows counter cooler workboard insofar as the refrigeration is concerned. This particular sketch simply outlines the path taken by the gas in its travel to absorb the heat which has accumulated either in the beer or barrel compartment.

When the unit already equipped with the compressor, shipped from the factory at Muskegon (Mich.), installation is made as a "package" unit, the temperature can be properly adjusted for the Temprite (meaning exit beer temperature), and the compressor switch settings have been adjusted to maintain the proper temperature in the beer compartments.

As beer comes from the brewery at an approximate temperature of 40° F. (and not to exceed 50° F.), occasions when this unit cannot be used will be rare.

Fig. 2 shows the travel of the beer out of the barrel and into the Temprite unit, where it is cooled. It also shows the travel of the CO_2 or air, pushing this beer up to the Temprite unit.

The air, carbonic gas (CO_2) is used primarily to lift the beer to the height required to make it flow out of the draft arm. Some customers will naturally want to install an electric air pump and others will desire the CO_2 tank. Either one is effective in the matter of pushing the beer up and out of the draft arm.

Remote vs. Package Units

In some localities package units will not be wanted for various reasons. However, Brunswick equipment has been designed to handle the problems of any particular customer drawing beer from the basement, back room, or any storage place not under the counter.

This storage compartment, wherever located, should be refrigerated to preserve the quality of the beer. No matter how well the temperature is maintained in the remote storage location, there will be a rise in the temperature on the beer passing through the lines to the counter dispensing station.

This loss must always be taken care of at this point by additional equipment or by reduced beer drawing. In the Brunswick counter cooler workboard unit this loss does not occur.

Freezing Not Likely

Another advantage of the Brunswick unit is that the compressor operates at a high back pressure. This helps to eliminate the possibility of freezing the beer.

Most beers freeze at 19° F., while under pressure. Thus by maintaining an average temperature of 40° to 50° F. on a switch setting from zero to 10 lbs. (SO_2), should any part of the control equipment fail, it would take considerable time to freeze the beer; and as the compressor switch is set to cut out at only a little less than 19° F., the equipment has a double safeguard.

A number of Brunswick officials believe that the days of ice-cooled beer are numbered, because of the attendent troubles from fluctuating temperatures. No matter how good the quality of the beer when it leaves the brewery, it can easily be ruined by poor dispensing equipment. This opens a vast market to the refrigeration industry because a constant temperature can only be maintained day after day, 24 hours a day, by mechanical refrigeration.

Refrigeration System

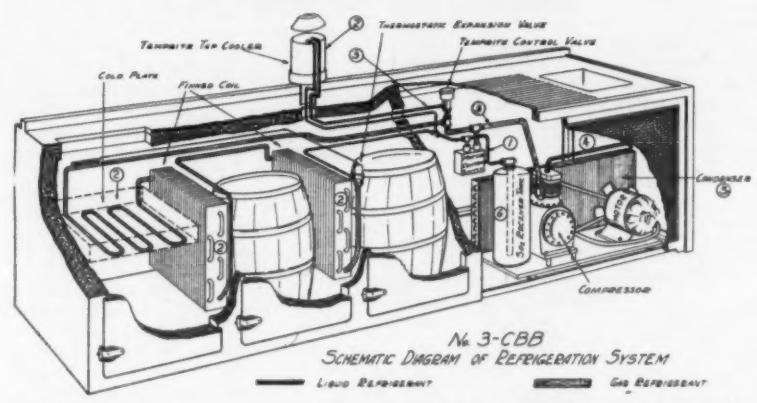


Fig. 1—Brunswick's counter cooler workboard unit, showing the operating cycle of the refrigeration cycle.

Beer Cycle

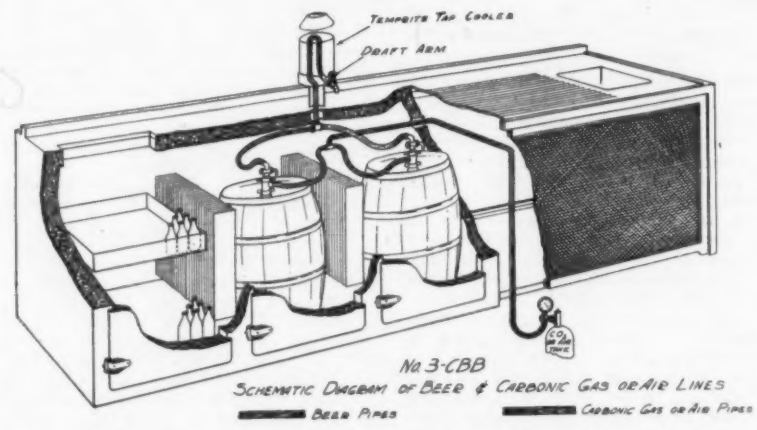

TEMPRITE TAP COOLER
DRAFT ARM
No. 3-CBB
SCHEMATIC DIAGRAM OF BEER & CARBONIC GAS OR AIR LINES
BEER PIPES
CARBONIC GAS OR AIR PIPES

Fig. 2—Cut-away of Brunswick's beer cooler, showing the travel of beer from barrel through the Temprite cooler to draft arms.

Thompson Answers Lindsay's Criticism Of E. T. L. Test Procedure

Electrical Testing Laboratories
80th St. and East End Ave.
New York City
May 11, 1933.

Editor:

A letter from one of your correspondents, published in your issue of April 19, criticizes the E.T.L. Test Procedure because it does not include a durability test. The test code, which you were good enough to publish in full, was set forth as a *proposed* procedure on which criticism was invited. It is gratifying and helpful, therefore, to receive Mr. Lindsay's views on refrigerator testing. But apparently he has overlooked the third paragraph of the text as published in your issue of March 22: "The Test Procedure is designed to develop the essential features of performance *at any given time.*

It does not include any test for durability. It is designed instead to show refrigerators' effectiveness and efficiency *as of a certain date.*"

It seems reasonable to suppose that the intelligent purchaser of any device wants two characteristics in that device, the highest effectiveness and the greatest durability which can be had for the price he pays.

The Test Procedure offered will separate those machines which have high effectiveness from those which possess less. Presumably refrigerators which do not perform well in the schedule tests would not be purchased. Durability may then be determined on the remaining machines. Hence a durability test has been purposely omitted from the Test Procedure.

Furthermore, neither does the procedure lay claim to be a standard of performance nor is it a performance specification. It aims merely to provide a routine procedure by which performance data may be obtained. Quality must be evaluated by referring those data to a standard or to a specification.

To evaluate the durability of a refrigerator requires observation of its performance to the end of an agreed-upon period.

Performance Factors

If seller and buyer can further agree that lacking either partial or complete breakdown in operation, the performance shall be evaluated in terms of energy consumption, internal temperatures and speed of making ice, then the E.T.L. Test Procedure furnishes a definite, orderly, standardized routine of technique for determining such performance at the beginning and at the end of the durability period, or at intermediate points.

A "normal" durability test, under "average" service conditions or even under "extreme" service conditions, would require from two to five years, or even longer. This is too long for the purchaser to wait and even if he would, the result might be useless because the type or model of refrigerator so tested would have been declared obsolete months before the end of the test.

Of course, it is obvious that where means are available for collecting and compiling servicing data on a large number of refrigerators in use, put out by certain manufacturers, the general durability of a given manufacturer's product can be evaluated, and in any case the weaknesses of certain types of constructions, of certain devices, or of certain methods of operation, are made evident so that the purchaser can avoid new models in which the old faults are incorporated. And this advantage is secured probably at a minimum of expense.

On the other hand, some kind of a "forced" durability test may be devised with intensified deteriorating influences and so make it possible to get a significant result in a shorter time than would otherwise be possible.

Manufacturer and purchaser must mutually agree as to the nature and magnitude of these intensified influences. Prospects for such agreement are not entirely reassuring.

An A.S.A. committee charged with the production of so simple a matter as the development of a standardized test procedure has labored for several years and still finds itself unable to secure agreement of both manufacturer and consumer interests.

Test Takes a Week

The E.T.L. Test Procedure is itself a miniature durability test because it requires about a week to complete, with the machine under constant observation and measurement in the meantime, and a surprising amount of information on probable durability is often secured in this short time.

Incidentally, it has not been our experience that with carefully controlled ambient conditions and with watthour meters reading to 0.01 kwh., the daily energy consumption of refrigerators varies as spasmodically as shown in Mr. Lindsay's graphs.

Mr. Lindsay recommends not less than 20 days continuous operation at elevated temperature and humidity. The tentative specifications for electrically operated domestic refrigerators of the Association of Edison Illuminating Companies go further and call for intermittent operation for not less than 90 days at elevated temperature and humidity.

It would appear that it is not sufficient merely to expose the refrigerator to elevated temperature and humidity while it is kept in continuous operation. There is more to durability than simply the ability of the machinery to remain in operating condition over a period of years.

Saturation of the thermal insulation with moisture is a difficulty over which manufacturers have shed copious tears. Not only does it tend to get the operating mechanism into a state of mind where it runs continuously with consequent mounting of power bills, but it also permits internal temperatures to rise above the value at which food can be preserved.

Under the steady test conditions, even with extreme values, water vapor will penetrate the insulation only under the influence of osmosis. But in service the penetration probably takes place because of the "breathing" action resulting from temperature changes in the ambient air.

It is for this reason that the specifications of the A.E.I.C., just referred to, require that the durability test last for 90 days, take place in a room in which the temperature is maintained at 90° F. (plus or minus 2° F.) and the relative humidity at 95 per cent (90-98 per cent), and that the machine alternately operate for 24 hours and then stand idle for 24 hours with doors wide open.

In this way the air between inner and outer shells of the cabinet, expanded during the idle period, contracts as operation is resumed, drawing in moisture-laden air which deposits its moisture as it cools.

The extended period of operation makes durability testing expensive. As a minimum there must be the cost of two determinations of performance, determinations detailed enough to show at least the three elements of operation mentioned above.

To this is added the expense of any interim observations and the expense of maintaining more or less constant the deteriorating influences so that the result may be intelligible, useful, and comparable after it has been obtained.

With sufficient funds it is always possible to carry on extended and detailed investigations and determine thereby many aspects of performance and durability.

But when a manufacturer has completed his developmental work and puts his refrigerator on the market, the immediate problem becomes one of securing performance data on the essential elements with the least practicable expenditure of time and money.

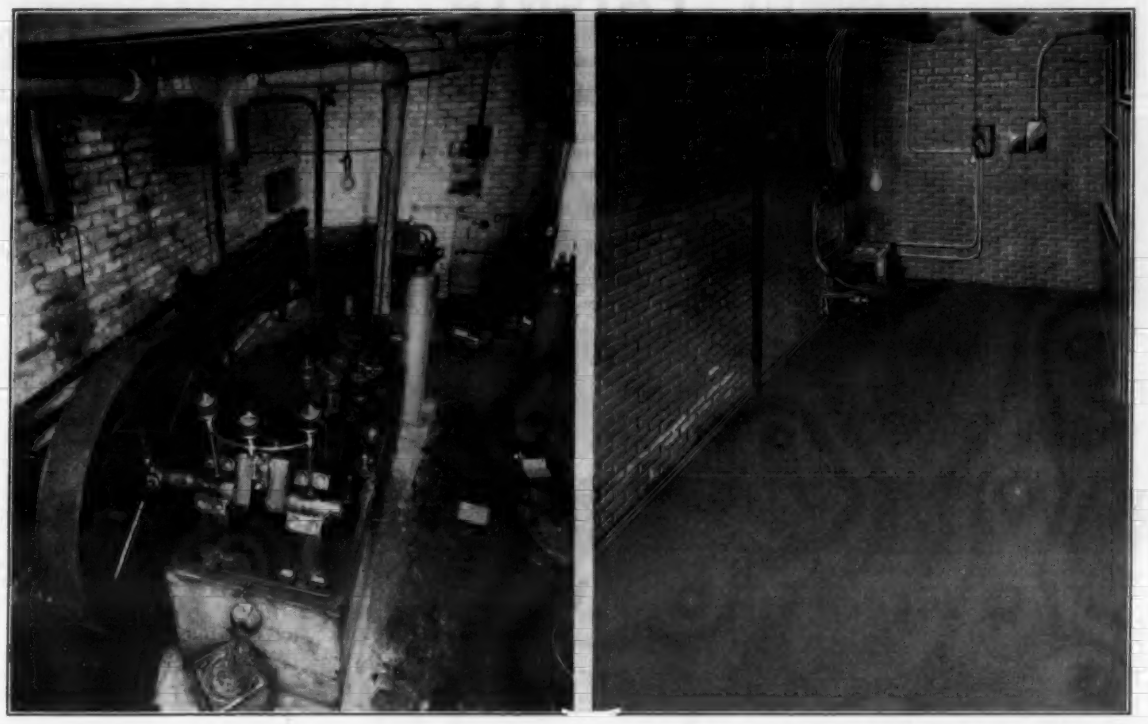
In preparing a test procedure to this end Electrical Testing Laboratories has drawn not only upon its own background of more than 30 years of testing experience, but it has utilized the comments and criticisms of a rather large number of interested persons, including consumer groups; it believes, therefore, that for the purpose stated, the Test Procedure submitted affords an opportunity for anyone sufficiently interested to obtain good value for his money or his time.

If modifications of the suggested procedure are desirable, there is nothing to prevent their use. In many of its own tests Electrical Testing Laboratories frequently modifies the procedure to suit specific requirements.

There is no wish to force its use by anyone else, but it has been offered with the thought that it might serve, in the absence of anything else of this kind, as a basis for preliminary conferences among all interested parties, from which a mutually satisfactory test procedure can be evolved, to constitute the first step toward the formulation of those standards which Mr. Lindsay agrees are needed.

GORDON THOMPSON,
Assistant chief engineer.

Before - - - - - and - - - - - After



Replacement of an old 15-hp. horizontal CO_2 machine by a 3-hp. Universal Cooler in the Michigan Cut Flower Exchange, Detroit, shows what development of automatic low-pressure machines means in space saving. Power savings are expected to pay for the new machine in two years. The low side cools a 35x15x11-ft. florist box.

New Orleans Bar Room Frigidaire Equipped

NEW ORLEANS, La.—The new bar room of the Roosevelt Hotel, New Orleans' largest hostelry, is 100 per cent Frigidaire equipped, according to Don M. House, New Orleans branch manager for Frigidaire Corp.

Frigidaire beer coolers are used in the bar, and in the basement beneath is a walk-in cooler with Frigidaire coils for the precooling of keg beer.

G. E. AIR-CONDITIONING DEPT. ADDS FIVE DEALERS

SCHENECTADY, N. Y.—Appointment of five new dealers to sell air-conditioning equipment have been announced by General Electric.

They are: C. A. Babb Co., Bangor, Me.; P. O. Eisenbeis, St. Louis, Mo.; A. L. Franks & Co., Manchester, N. H.; A. P. Lascelles & E. M. Holden, Buffalo; and Warning Sheet Metal Co., Oshkosh, Wis.

ANOTHER G. E. MODEL HAS ENCLOSED MONITOR TOP

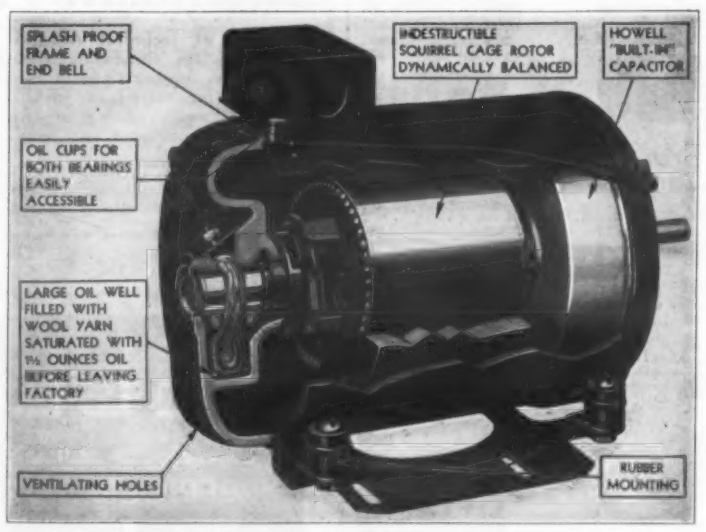
(*Concluded from Page 1, Column 2*)

vegetable pan and a glass chiller tray.

The condensing unit used in the new model is the G. E. model CA-1. All of the working parts are enclosed within the drawn steel shell.

Three shelves of the bar type are used, with steel wires running from front to rear. Space for bottle storage is provided on the top shelf.

Semi-concealed hardware in modernistic design, with chrome finish, is employed. The single-action door latch and self-sealing device are other features of the door construction.


SPLASH PROOF FRAME AND END BELL
INDESTRUCTIBLE SQUIRREL CAGE ROTOR DYNAMICALLY BALANCED
HOWELL "BUILT-IN" CAPACITOR
OIL CUPS FOR BOTH BEARINGS EASILY ACCESSIBLE
LARGE OIL WELL FILLED WITH WOOL YARN SATURATED WITH 1½ OUNCES OIL BEFORE LEAVING FACTORY
VENTILATING HOLES
RUBBER MOUNTING

Consider These Motor Facts

IN considering your motor needs keep in mind the fact that back of the Howell *perfected* Capacitor Start Motor, is over five years of pioneering development—not one year—but over five years.

That means something in dependable motor service—to the dealer—to the manufacturer.

That same quality that has made Howell Red Band motors *make good on the hard jobs* in industry, is inherent in the Howell Capacitor Start Motor for refrigeration.

Howell Sales and Service in over 50 Principal Cities

Howell Electric Motors Co.
Howell Michigan
Pioneer Builders of Capacitor Start Motors

NEWS!

REFRIGERATION TUBES
in lengths up to 200 ft.

For the first time in the industry's history, Seamless Copper Refrigeration Tubes as large as one-half inch in diameter are available in lengths up to two hundred feet. Smaller tubes can be had in even longer lengths. For instance, the one-quarter inch tube illustrated is 425′ long.

A newly developed process has made possible these long lengths, which materially reduce the risk of failure by minimizing splices. The longer lengths also reduce scrap losses, as the exact amount required can be cut without waste at the ends.

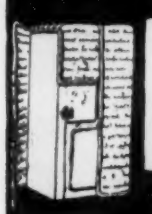
French De Luxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is *completely* dehydrated, sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (*commercially* dehydrated), with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. This important quality is in every coil because highest metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.

THE FRENCH MANUFACTURING CO.
General Offices: Waterbury, Connecticut

FRENCH REFRIGERATION TUBES

PATENTS
Searches, Reports, Opinions by a Specialist in REFRIGERATION
H. R. VAN DEVENTER
Solicitor of Patents - Refrigeration Engineer
642 MADISON AVE. NEW YORK

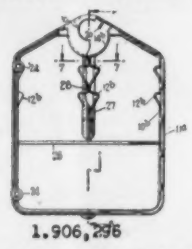
Fulco Adjustable REFRIGERATOR COVERS

Fit any size refrigerator! Big saving over old styles! Easy to adjust—more convenient! Made of strong, durable green drill—flannel lining and non-lump filler. Write for prices today!
Fulton Bag & Cotton Mills

PATENTS

ISSUED MAY 2, 1933

1,906,296. EVAPORATOR. Edward T. Williams, New Rochelle, N. Y. Filed Nov. 29, 1930. Serial No. 498,977. 15 Claims. (Cl. 62—126.)

1. An evaporator comprising a pair of


1,906,296

sheet metal shells nested together and having a space between the same for the reception of liquid refrigerant, said shells defining a freezing chamber, a trap for the liquid refrigerant wholly within said freezing chamber formed by a depression in the inner shell, and a hollow partition depending from and communicating with said trap.

1,906,370. MECHANICAL SYSTEM FOR HEATING OR COOLING AIR. Frank M. Darrow, Stockton, Calif. Filed Dec. 10, 1931. Serial No. 580,090. 5 Claims. (Cl. 257—9.)

5. A system for altering air temperature comprising separate mechanical air circulating device, a conduit connecting said devices, a heat transfer device interposed in the conduit between the devices, means to maintain said devices operating a definite speed ratio, and means to alter such ratio at will.

1,906,412. ARTIFICIAL ICE MAKING APPARATUS. George L. Pownall, Atlanta, Ga. Filed June 12, 1929. Serial No. 370,201. 5 Claims. (Cl. 62—162.)

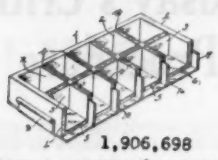
1. In combination a container for a body of water to be frozen provided with a transverse channel across the bottom thereof an internal freezing member detachably mounted in said container and in engagement with said transverse channel to position said internal freezing member relative to said continer, means to circulate a freezing medium to and from said internal freezing member, said freezing member being tapered inwardly and downwardly from the upper end toward the lower end of the container and adapted to be detached and removed from the container before the freezing operation is completed.

1,906,414. METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed Jan. 22, 1930. Serial No. 422,579. 4 Claims. (Cl. 62—169.)

2. A method of refrigeration employing a motive medium and a refrigerant in a closed and sealed system which comprises vaporizing the motive medium by heat application, vaporizing the refrigerant with the object of heat absorption and under conditions so as to maintain substantially equal pressures on refrigerant vapor and vapor of the motive medium, diffusing said vapors into each other, thus causing a reduction of partial pressure on each vapor, cooling the mixture of vapors to liquefy the vapor of the motive medium, but not the refrigerant vapor, thus increasing the partial pressure on refrigerant vapor, allowing the liquefied motive medium and the refrigerant vapor to fall under the influence of gravity to a lower point, increasing the pressure on said refrigerant vapor due to the liquid column thus formed, separating the refrigerant vapor and returning each respective liquid to points of vaporization.

1,906,698. CONTAINER FOR USE IN REFRIGERATORS. Harold F. MacGrath, Detroit, Mich., assignor to Inland Mfg. Co., Dayton, Ohio, a Corporation of Delaware. Filed Sept. 24, 1930. Serial No. 484,143. 5 Claims. (Cl. 62—108.5.)

1. A carrier for mold trays for mechanical refrigerators, said trays being formed of a flexible non-metallic material with hollow dividing walls, said carrier comprising a flexible metal bottom plate formed with integral upstanding members to fit within said hollow walls and with


1,906,698

end members to engage the opposite ends of said tray.

1,906,815. COOLER. Peter Schlumbohm, Berlin, Germany, assignor to The American Thermos Bottle Co., Norwich, Conn., a Corporation of Ohio. Filed April 5, 1929, Serial No. 352,732, and in Germany April 12, 1928. 3 Claims. (Cl. 62—75.)

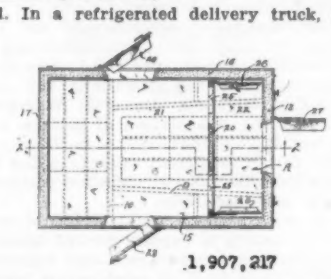
1. A heat exchange device of the character described comprising a body member of good heat conducting material having separate compartments, one to receive an article or articles to be cooled or heated and the other to receive a cooling or heating medium, the compartments being disposed end to end and having a single wall which comprises the closed ends of both compartments, each compartment being substantially completely open at its other end to facilitate both the manufacture of the device as a cast product and the introduction and removal of articles to be heated or cooled and the heating or cooling medium into and from the compartments.

1,907,011. EVAPORATOR SHELF MEANS. Franklin G. Slagel, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y., a Corporation of New York. Filed Dec. 1, 1931. Serial No. 578,365. 3 Claims. (Cl. 62—126.)

3. The combination with an evaporator having a chamber formed with oppositely positioned guides, of a shelf means for supporting pans in superimposed relation in said chamber, comprising a base portion adapted to support one pan, sides extending from said base portion and formed with inwardly extending flanges adapted to support a second pan, said sides being formed with mounting portions adapted for interconnection with the guides in said chamber.

1,907,217. REFRIGERATED TRUCK BODY. Richard A. Rott, Madison, Wis. Filed July 30, 1932. Serial No. 627,474. 2 Claims. (Cl. 62—13.)

1. In a refrigerated delivery truck, an


1,907,217

insulated truck body, a transverse partition arranged in said truck body defining a main insulated compartment and an auxiliary insulated compartment, independent entrance doors for said compartments arranged within the walls of the body, a refrigerating medium in the main compartment, the transverse partition having openings therein for permitting the circulation of cool air from the main compartment into the auxiliary compartment and closure doors for said last mentioned openings.

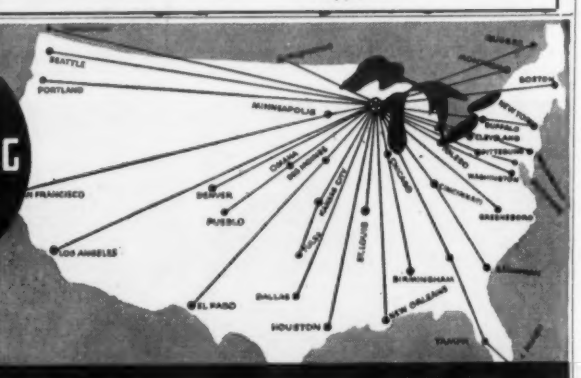
REISSUE

18,819. REFRIGERATING PAN. Michael K. Buchanan and Albert G. Horton, Norfolk, Va. Original No. 1,830,260, dated Nov. 3, 1931, Serial No. 484,408, filed Sept. 25, 1930. Application for reissue filed Dec. 3, 1932. Serial No. 645,618. 22 Claims. (Cl. 62—108.5.)

8. In an ice cube pan, a grid having a plurality of normally stationary walls and a plurality of normally movable walls, and means for raising said normally movable walls for breaking the cubes loose from the walls.

ALCO THERMO VALVE
METHYL CHLORIDE - F-12
SULPHUR-DIOXIDE
A NEW thermostatic valve—*that can be installed in any position or location—and in any temperature*—the control always resides in the thermal bulb—even if the body of the valve is subjected to a lower temperature.
Write for Bulletin No. 129
ALCO VALVE CO., INC.
2629 Big Bend Blvd. St. Louis, Mo.
New York Los Angeles San Francisco Dallas

Type NR

45 DISTRIBUTING POINTS

ANSUL ANHYDROUS ANALYZED **SULPHUR DIOXIDE**
Quick distribution is a big factor in the success of Ansul Sulphur Dioxide. Write today for the complete list of available warehouse stocks.
ANSUL CHEMICAL COMPANY • MARINETTE • WIS

One of the laboratories of Virginia Smelting Co., West Norfolk, Va., in which Extra Dry Esotoo is carefully tested before shipment.

Stocks of this tested Extra Dry Esotoo are carried in 36 convenient cities. Immediate shipment can always be made direct from West Norfolk to any customer anywhere. Write for name of nearest stock and distributer today.

OUR Extra Dry Esotoo is pure, clean, dry and made by our own patented process. Rigid laboratory control is maintained to insure dryness, purity and uniformity. Microscopic tests have proven our assertions.

Write, wire or cable us for further facts or information on Extra Dry Esotoo. Cable Address: Eustis Boston.

VIRGINIA SMELTING COMPANY
West Norfolk
Virginia
F. A. Eustis, Sec., 131 State St., Boston and 76 Beaver St., New York.

EXTRA DRY ESOTOO
TRADE MARK REG. U.S. PAT. OFF.

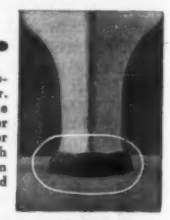
Exports of Refrigerators

March, 1933, Shipments Reported by the Bureau of Foreign and Domestic Commerce, Washington, D. C.

	Electric Household Refrigerators		Electric Commercial Refrigerators Up to 1 Ton		Parts for Electric Refrigerators
	Number	Value	Number	Value	Value
Austria	...	...	...	...	$ 308
Belgium	56	$ 4,753	106	$ 8,999	10,567
Czechoslovakia	...	...	7	773	3,433
Denmark	3	199	20	2,316	2,573
France	256	19,905	138	13,085	10,878
Germany	140	6,092	109	10,281	21,182
Gibraltar	...	...	1	207	59
Iceland	2	127	...	...	7
Irish Free State	9	512	32	2,485	846
Italy	31	1,457	87	6,268	6,672
Malta, Gozo, and Cyprus	2	134	...	...	...
Netherlands	84	6,134	49	6,606	5,758
Norway	33	2,924	9	1,196	471
Poland and Danzig	...	...	7	974	953
Portugal	...	...	...	...	419
Rumania	17	1,263	...	...	...
Spain	62	5,381	8	833	2,612
Sweden	31	1,557	7	689	4,006
Switzerland	34	1,863	57	6,001	8,126
United Kingdom	320	46,341	69	6,944	14,826
Canada	87	5,915	5	1,346	12,067
British Honduras	1	96	...	...	...
Costa Rica	2	185	1	223	28
Guatemala	2	242	...	...	50
Honduras	1	106	...	...	109
Nicaragua	1	120	...	...	3
Panama	20	3,119	11	2,062	2,570
Salvador	1	125	4	567	738
Mexico	62	6,953	3	553	1,040
Newfoundland and Labrador	...	...	4	735	5
Bermudas	12	1,284	...	...	269
Barbados	5	595	...	...	...
Jamaica	1	83	...	...	...
Trinidad and Tobago	...	...	...	...	34
Other British West Indies	1	93	...	...	...
Cuba	55	4,905	5	818	57
Dominican Republic	8	843	...	...	12
Netherland West Indies	10	1,037	...	...	28
Haiti, Republic of	...	...	...	...	67
Virgin Islands of U. S.	...	...	...	...	38
Argentina	20	2,655	27	3,808	1,657
Brazil	158	15,552	39	3,745	2,159
Chile	2	236	...	...	75
Colombia	29	2,958	1	118	588
Peru	3	151	...	...	221
Uruguay	1	72	1	297	523
Venezuela	21	2,355	1	409	57
Aden	1	339	...	...	30
British India	136	11,995	28	4,364	5,334
British Malaya	13	1,108	...	...	443
Ceylon	4	335	...	...	40
China	35	5,368	3	536	3,174
Netherland East Indies	86	11,615	6	3,042	272
French Indo-China	...	...	...	...	13
Hong Kong	31	3,366	1	103	382
Japan	11	698	5	538	2,454
Palestine	8	915	...	...	50
Philippine Islands	40	4,086	17	2,362	1,813
Siam	2	203	...	...	...
Syria	4	462	...	...	13
Turkey	23	1,607	6	946	80
Australia	...	...	...	...	707
New Zealand	1	335	...	...	...
Belgian Congo	...	...	...	...	33
British East Africa	...	...	...	...	165
Union of South Africa	190	17,860	7	650	1,142
Gold Coast	7	710	...	...	50
Nigeria	...	...	...	...	91
Other British West Africa	4	368	...	...	50
Egypt	13	1,176	4	615	330
Algeria and Tunisia	104	7,188	13	1,519	1,572
Other French Africa	4	382	...	...	...
Liberia	...	...	...	...	25
Morocco	166	16,119	44	4,566	1,926
Mozambique	4	345	...	...	137
Canary Islands	2	147	...	...	...
Total	**2,972**	**$235,044**	**942**	**$101,569**	**$136,407**
Shipments to Hawaii	109	$ 10,867	22	$ 2,800	$ 4,352
Puerto Rico	42	$ 4,215	8	$ 1,446	$ 2,509

Testing Laboratory
For refrigerators and refrigerating equipment
George B. Bright Co.
Refrigerating Engineers and Architects
2615 12th St., Detroit, Mich.

Testing Service
for Domestic and Commercial Electric Refrigeration
Testing and experimental laboratory service for Manufacturer, Distributor, Central Station. Test data exclusive property of client.
Electrical Testing Laboratories
80th St. & East End Ave.
New York

Universal Tru-Fit Gliders . .

. . provide quick, lasting protection to linoleum and floor. Indispensable for accurate leveling. Entirely of rubber with embossed soft rubber shield which adds deft touch of smartness. Can be used on any make refrigerator. Send for samples and prices.
Ask about the other important refrigerator accessories we make
THE AETNA RUBBER CO.
Ashtabula Ohio

The Mastercraft Refrigerator Pad and Carrying Harness
(Pad and Harness can be furnished separately)

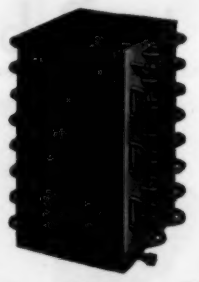
Both pad and harness are adjustable, one size only being required to fit practically all makes and sizes of electric refrigerators. This affords the most economical and convenient arrangement as testified by hundreds of dealers.
Pad—$6.00 each. Harness—$4.00 each. Lifting pipes $1.50 per set extra.
Write for special booklet
All Phones Belmont 8710
BEARSE MANUFACTURING CO.
3815-3825 CORTLAND St. CHICAGO, ILL.

Authoritative . . .
YEARS of technical research lie behind the simple, concise and authoritative presentation of refrigeration knowledge set forth in U. E. I. training. Leading manufacturers cooperate with our staff engineers . . . It is not a one man job.
UTILITIES ENGINEERING INSTITUTE
Wells at Kinzie Street, Chicago
Complete and practical refrigeration training by extension methods
Seventh Year

SELL!
a completely equipped REFRIGERATOR
•
FEDERAL REFRIGERATOR FURNISHINGS
The only complete line—saves space—saves food—saves money
•
They increase the capacity and efficiency of every refrigerator
FEDERAL ENAMELING & STAMPING CO.
World's Largest Manufacturers of Enameled Kitchenware
PITTSBURGH • PENNSYLVANIA

BUYER'S GUIDE

A NEW FIN COIL *by* PEERLESS



Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.,—aluminum tubing for ammonia.

Absolute Metal to Metal Contact.

A Superior Coil in which Soldered Return Bends have been eliminated.

Priced to meet 1933 conditions.

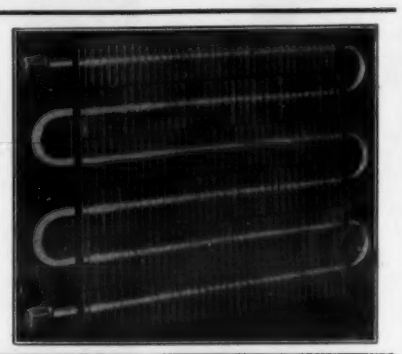
Write—Wire for Catalog.

PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.

"REMPE" SUPER COLD FIN COILS

for

Methyl Chloride, Ammonia, F-12 and Sulphur Dioxide



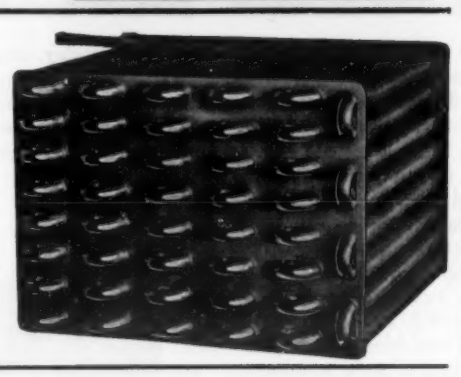
REMPE "FIN COIL" CO.

3000 W. CARROLL AVE.

CHICAGO KEDZIE 0483 ILL.

ROME EVAPORATORS

Highest Efficiency With Smallest Number of Joints



Rome-Turney Radiator Co.
Rome, N. Y.

Makers of Rome Condensers and Helical Finned Tubing

For Every Job

of handling refrigerators.

X-70 REFRIGERATOR TRUCKS fit all cabinets, with or without legs, or in the crate, eliminate one man on delivery and prevent damage to cabinet, floor or walls. Sturdy all-steel frame, 4" rubber tired wheels, one truck with top casters and handles for tilting and rolling into delivery truck and on stairs. Only pads touch cabinet. Complete set $34.50. Ball bearing swivel casters on one end $5 extra.

We also manufacture the new Balance Truck.

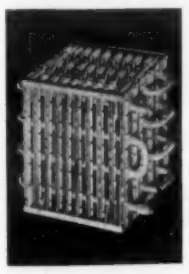
SELF-LIFTING PIANO TRUCK CO. FINDLAY, OHIO

Manufacturers of Trucks for 33 Years

We carry a complete stock of

EVERYTHING IN REFRIGERATION

including



FEDDERS COMMERCIAL COILS

Thermostatic Expansion Valves, Tubing, Manifolds, Fittings, Controls, etc.

Save money, time and work—Buy everything from one source

MELCHIOR, ARMSTRONG, DESSAU CO.

1135 CALLOWHILL ST. PHILADELPHIA | 116 BROAD ST. NEW YORK | STATLER BLDG. BOSTON

Dayton V-Belts

For all makes and types of refrigerators. There is a stock near you. Ask for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio

The World's Largest Manufacturer of V-Belts

VOLUME OF APARTMENT HOUSE REFRIGERATION SALES IN NEW YORK CITY

A financially sound organization, offering the best of bank references, is interested in representing a manufacturer in the New York apartment house sales field.

This company with offices and showrooms in Manhattan, can offer to a responsible manufacturer a seasoned apartment house sales organization, covering the entire Metropolitan area; with **ESTABLISHED CONTACTS** in leading mortgage companies, banks, insurance companies, apartment house owners, etc.

The manufacturer who is interested in immediate **SALES VOLUME** at a **MINIMUM SALES COST**, (drawing accounts, rents, telephone expenses, etc., eliminated) plus the desirability of the type of accounts that the individuals in this sales organization cater to, should immediately wire or write **Box 562**, Electric Refrigeration News, for further details.

DETROIT LUBRICATOR COMPANY
TRUMBULL, LINCOLN, MARQUETTE & VIADUCT
DETROIT, MICH.

Manufacturers of "Genuine Detroit" Automatic and Thermostatic Expansion Valves, American Cube-makers, American Refrigeration Sections, Automatic Controls for Temperature and Pressure, Electric Valves for Refrigerant and Water Control, Thermostats, Humidistats and complete controls for Air Conditioning.

Descriptive literature gladly sent upon request

Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

QUESTIONS

Zahm Beer-Cooling Apparatus

No. 1198 (Distributor, California)—"We are anxious to obtain information regarding Zahm beer-cooling apparatus. We believe this equipment is used by Liquid Carbonic Corp."

Answer—Liquid Carbonic Corp. has exclusive patent rights to this equipment. Address: 3100 S. Kedzie Ave., Chicago, Ill.

Union-Made Refrigerators

No. 1199 (Department Store, Kentucky)—"Kindly advise us what makes of household electric refrigerators are made by union workers."

Accessories

No. 1200 (Dealer, Indiana)—"Can you tell us where to buy sliding racks to hold eggs in electric refrigerators? Also rubber ice cube trays for Norge and Majestic refrigerators?"

Answer—Wire egg racks: Peerless Wire Goods Co., Inc., Lafayette, Ind. Rubber ice cube trays: Inland Mfg. Co., 15 Coleman St., Dayton, Ohio.

Rice Replacement Parts

No. 1201 (Distributor, Ohio)—"We are wondering if you can tell us where to secure replacement parts for a Rice electric refrigerator."

Answer—Rex Cooling Industries, Inc., 35 York St., Brooklyn, N. Y.

Beer-Cooler Parts

No. 1202 (Missouri) — "We are anxious to obtain immediately the names of several sources of supply for spigots, tinned copper tubing, and fittings required for the manufacture of a novelty bar unit which one of the manufacturers whom we represent will put into production."

Answer—For spigots—Kason Hardware Corp., 61 Navy St., Brooklyn, N. Y., and Industrial Refrigeration Co., Newton Ave., Bethlehem, Pa.

For copper tubing—Bridgeport Brass Co., Bridgeport, Conn.; Bundy Tubing Co., 4815 Bellevue Ave., Detroit, Mich.; French Mfg. Co., Waterbury, Conn.; and Wolverine Tube Co., 1491 Central Ave., Detroit, Mich.

For fittings—Commonwealth Brass Corp., 5781 Commonwealth Ave., Detroit, Mich.; Kerotest Mfg. Co., 2525 Liberty Ave., Pittsburgh, Pa.; and Mueller Brass Co., Port Huron, Mich.

Refrigerant Tests

No. 1203 (Distributor, Iowa)—"We have been advised that you have available reports on the various refrigerants used in household refrigerators now on the market. The writer is anxious to get a complete report on the following: sulphur dioxide, methyl chloride, F-12, and Carrene."

Answer—See Dec. 30, 1931, issue of ELECTRIC REFRIGERATION NEWS which describes results of a series of comparative tests on common refrigerants, conducted by Kinetic Chemicals, Inc.

Rubber Door Gaskets

No. 1204 (Distributor, Virginia)—"Will you be so kind as to advise us where we might purchase refrigerator door gaskets made of rubber, similar to that used by Frigidaire on present models, but sold in strips from which we could cut lengths to suit our requirements."

Answer—Jarrow Products Corp., 143 W. Austin Ave., Chicago, Ill., and Miller Rubber Products Co., South Main St., Akron, Ohio.

Compressor Seal Materials

No. 1205 (Manufacturer, Rhode Island)—"Can you refer us to makers of metal suitable for seal parts in a refrigeration compressor? We have had some difficulty with the seals sticking after the machines have been stopped for a month or two. We think perhaps a different metal for one of the seal members might solve this difficulty. At present we are using semi-steel for one member, and hardened and ground steel for the other."

Answer—See page 216 of the REFRIGERATION DIRECTORY and MARKET DATA BOOK.

SELLS 31 APPLIANCES IN 20-DAY PERIOD

WILLIAMSTOWN, N. C.—J. C. Downing, Virginia Electric & Power Co. salesman, probably established an all-time record in this town of 2,731 people, by selling 23 Westinghouse refrigerators, five ranges, and three water heaters in 20 days.

SEAFOODS RESTAURAUT BUYS FRIGIDAIRE BEER COOLER

BALTIMORE — Hornick's, famous for 100 years for its seafoods, has installed a Frigidaire beer cooler for draft beer. The restaurant was a gathering place in 1830 for government officials who stopped over in Baltimore during their travels between New York and Washington.

Financial Statement

Westinghouse Electric & Mfg. Co.

EAST PITTSBURGH, Pa.—March financial statement of the Westinghouse Electric & Mfg. Co. follows:

"In spite of the financial situation during the first quarter of this year, March bookings were the largest of any month since July, 1932. While the company secured its share of available business, yet it was so low that operations for the three months ended March 31, 1933, resulted in a net loss of $3,491,572.

"The comparative figures for the first quarter of 1933 with the first and the last quarters of 1932, are as follows:

	Quarter Ended Mar. 31, 1933	Quarter Ended Mar. 31, 1932	Quarter Ended Dec. 31, 1932
Orders received:	$12,847,801	$20,388,658	$14,224,530
Sales billed:	13,161,721	20,377,948	16,615,730
Net loss:	3,491,572	1,320,148	2,986,289

"At March 31 cash and marketable securities amounted to $31,597,253 compared with $32,851,763 at Dec. 31, 1932. Westinghouse was fortunate in that only a relatively small amount of its cash, compared to the total, was on deposit in banks that have not reopened since the banking holiday.

"At some of our plants certain departments are operating at a higher rate of production, particularly Mansfield, Ohio, and East Springfield, Mass., where Westinghouse refrigerators are made. Indications are that 1933 will produce the largest number of refrigerator sales since the company entered this field."

43 DEALERS IN ARIZONA ATTEND LEONARD SCHOOL

PHOENIX, Ariz.—Momsen-Dunnegan-Ryan Co. of Phoenix, distributor of Leonard electric refrigerators in this area, played host to 43 dealers, salesmen, and factory officials here last week, during the retail schools held by Leonard Refrigerator Co.

The school was conducted by R. I. Petrie, general sales manager of Leonard; A. M. Taylor, merchandising director; A. E. Gibson, representing the Refrigeration Discount Corp.; F. W. Topping of Los Angeles, representing the service department; and J. B. Nicholson, regional manager.

Phoenix dealers and salesmen in attendance were Ernest Fannin, Paul Fannin, Clifton Baldwin, Connie Atkins, Frank Coles, Sr., Frank Coles, Jr., Ridge Hooper, B. M. Howard, E. E. Pilcher, Frank Chipman, William Coles, S. A. Johnson, O. P. Wheeler, Harrell Gannaway, Harold Spotts, S. W. Wilcox, E. V. O'Malley, J. Ketchum, Henry Eickhoff, J. P. Sexton, J. J. Curry, Johnny Curry, Jr., J. Fred Ryan, George E. Crysler, A. J. Murray, George J. Patridge, Warren Hunter, Taylor Blake, LeRoy Carver, John McCormick, C. J. Read, R. G. Reed.

From out of town points came A. T. Morgaridge, Chandler; William G. Greenwood and H. H. McMullen, Prescott; George McMillan, Jerome; and F. F. Rodriquez, Nogales.

FRIGIDAIRE EQUIPMENT USED ON SUPPLY SHIPS

BALTIMORE — Frigidaire equipment is being installed in the lighthouse service supply ships Orchid and Speedwell for refrigeration of their cold storage rooms, dairy product storage compartments, and ice makers, according to H. H. Zimmerman, commercial sales manager of the Baltimore-Washington district of Frigidaire Sales Corp.

The two supply ships base at Baltimore and Norfolk, Va., and ply the Chesapeake Bay and Hampton Roads steamship lanes.

600 Attend Cooper Demonstration

CHICAGO—Six hundred women attended the all-electric kitchen demonstration given April 26 by R. Cooper Jr., Inc., Chicago General Electric distributor, in the company's main salesroom on LaSalle St.

The demonstration was conducted by the distributor's home economist, Miss Nell Snavely. Miss Prudence Penny, home economist for the Chicago *Herald & Examiner*, was guest speaker.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: 50 words or less, 1 time, $2.00, extra words 4 cents each. Three times, $5.00, extra words 10 cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Bldg., Detroit, Mich.

POSITIONS WANTED

WANTED: A job of installation and service work with a serviceman, dealer, distributor, or manufacturer of mechanical refrigerators by an engineering college graduate, who is 24 years old. Box 564.

EQUIPMENT FOR SALE

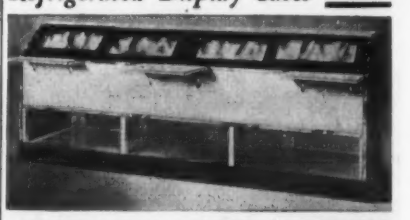
DISTRESS MERCHANDISE. Will sacrifice about a hundred Electrolux Gas Refrigerators; 20 three foot, 23 four, 7 fives, 2 tens, 1 twenty all new and 32 threes, 7 fours, 4 fives, 1 seven, and 1 ten slightly used but in perfect condition. Correspondence solicited. Box 563.

How to save money on Motor, Transmission, Crank, Eccentric and Compressor Shafts: Send us your blue prints, we will send you our prices. Write today.

-- at Lower COSTS! precision built SHAFTS

MODERN MACHINE WORKS
156 N. Milw. St. Milwaukee, Wis.

ACE HARD RUBBER SLIDING & HINGED DOORS . . . . . *for Refrigerated Display Cases*



A wide range of standard styles and sizes. Also, Ace hard rubber slide rails, jambs, trim, glazing strips, etc. Special parts to order.

● *Write for catalogue and prices*

AMERICAN HARD RUBBER COMPANY
11 Mercer St., New York, N. Y.
Akron, O.—111 W. Washington St., Chicago, Ill.

McCORD REFRIGERATION PRODUCTS

▼ ▼

Commercial Evaporators

Domestic Evaporators

Condensers

McCord Ice Trays

Spiral Finned Tubing

Spiral Copper Finned Iron,

Steel or Copper Pipe

▲ ▲

McCORD RADIATOR & MFG. CO.
DETROIT - - MICH.

A good product sold at 1933 prices by a profitable distributor policy should interest you.

BRUNNER MANUFACTURING CO. UTICA, N. Y.

BRUNNER
REFRIGERATING EQUIPMENT